# THE BUILDER

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# THE BUILDER

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## THOMAS ROWLANDSON

THE centenary of this famous artist is celebrated by the unique exhibition which opened at the Tate Gallery on Wednesday. A selection of ninety tinted drawings indicates but a fraction of the vast extent of this artist's labours. Professor Tonks classes Rowlandson as the father of the modern school of draughtsmanship. Little is known of the details of his career, yet his drawings epitomise the extent of his doings. A slight obituary notice states that he was the son of a tradesman in the Old Jewry, who sent him to a good school in Soho Square. As a mere boy he attended the newly opened Academy Schools, and sat at the feet of Reynolds. From his sixteenth to eighteenth year he was studying in Paris, returning to London in 1772 to continue his studies at the Academy.

Rowlandson's career divides into three periods, *i.e.*, student days in London and Paris, the period during which he took up portrait painting, and the phase when he was working under Ackermann's instructions. All these periods were connected by years of unremitting toil. He travelled through the length and breadth of England, as well as taking frequent journeys on the Continent, drawing anything and everything. Architecture comes into the gamut of his works, but with the exception of some studied interiors, it is mainly shadowy and elusive. His flair was to seize upon outstanding features of buildings rather than attempt detail. The roads and wayfaring life, scenes at busy ports, hangings, market fairs and crowded streets, were his chief subjects. He could invent a conventional treatment for trees and brushwood, hit off the character of a country town, and depict the rotundity of his time with a few deft strokes of his broad reed pen. His knowledge of anatomy and the human form was amazing. Living in a Bohemian circle, touching hands with J. R. Smith, Morland, Gillray, friendly with Angelo the fencing master, he became the interpreter of the loose if fashionable life of the period of the Napoleonic wars. His drawings are alive with the comedy of life. The laughter they caused at the time, when they were eagerly purchased by the public, has been echoed for more than a century. Now the artist is ranked in a higher category than that of a mere caricaturist: he is thought of as the line historian of the period.

From 1775 to 1781 he exhibited portraits at the Academy. Then follows a break until 1784, when he continued to exhibit until 1787. After this his name does not appear in the catalogues. As early as 1780, Rowlandson came before the public notice as a draughtsman-etcher worthy of attention. His métier, undoubtedly, was recording scenes of social life. His style was virile, voluptuous, concise and excellent. It exactly suited the contrasts between high and low. It was almost ferocious in its brilliant dash and surety. Even the cheap prints, issued at a shilling apiece, avoid the stigma of being too facile. Perhaps the best of his early works is the studied drawing of Vauxhall Gardens, coloured prints of which were on sale after 1784. Rowlandson, whatever his own shortcomings as a drunkard and a gambler, was consciously sympathetic to the character of his fellows. He saw life, not through rose-coloured spectacles as was the case with Farington, but as one alive to its distressing contrasts. He rarely caricatured scenery, neither did he fail to record the charms of pretty women. The ugliness of the worldly is shown in the best spirit of grand caricature. He grades his subjects and allows for the contrasts of prettiness and absurdity, pulling the theme into unity by the satirical wit of his rolling line. Hogarth had a similar trick and used it with more serious intent, as befitted the limner of the first and second of the Hanoverian reigns. Rowlandson in his methods excelled the somewhat stilted works of his French contemporaries, and this he accomplished with a tithe of the labour.

Wherever Rowlandson moved his perceptive eye was noting the attitude of persons under different situations. His drawings pulsate with life. The fine collection of his originals in the possession of Mr. Bridger, of Penzance proves his versatility. Here we become friendly with Cornish boatmen, we visit the Delabole quarries, and inquire into the contrast of natural scenery.

The sketch, in the British Museum, of George Morland in his handsome and debonair years, has a fireplace for a background, which is almost a working detail. His bold flowing penwork traced the contours of buildings, the cauliflower silhouette of trees, and the undulations of the countryside with vehement skill. But he never lost the atmospherics, and he was always an adept at slight picture making. His figure studies of men and animals, of individuals and crowds, have in every case the easy spontaneity which is never absent from drawings made at the moment. His work not only captivated the public, but it inherited the tradition of Hogarth, and in its bright fluent illuminations roused the envy, as it did the praise, of his contemporaries.

It was the gift of quick notation, combined with years of experienced groundwork, that gave Rowlandson the pull over the accomplished members of the Royal Academy. Here was a man who could tackle anything, and bring it down to a few lines on paper. One who could rival Vandervelde in drawing ships, was as gifted as Cipriani or Bartolozzi, was less ponderous than Claude, and as a caricaturist less brutal than Gillray. As Rowlandson's work advanced to the third stage, it began to show new tendencies. All along there had been an admixture of the pretty with the ugly. Now there was to be serious work for Ackermann, as revealed in the series of plates for the Microcosm, with which the elder Pugin was associated. At the same time, the brilliant gaiety which had been such a feature of the work previously exuding from his pen developed into a flashiness bordering on the gross. In extenuation, it should be remembered that the period of the Regency had little in common with the outward refinement associated with the dress and manners of the age previous to it. Rowlandson was now advancing in years, his technique was as brilliant as ever, but he had lost the fire of youth, and had passed the youth of old age.

His industry from first to last was literally enormous. He was familiar with the interiors of fashionable clubs, at home in the Pump Room at Bath, equally delighted with tavern life, and he could execute the incidents for the imaginary tour of Dr. Syntax. Rowlandson's fame as a natural artist does not rest upon his capacity for work, nor his skill in suiting the public taste. On the contrary, it lies in his mastery of line, his appreciation for tremulous activity, no less than his conquest of anatomy and perspective. Sufficient is it to say that his equal has, perhaps, never been found, and that the modern school which appears to think it has solved the problem of the fourth dimension in art, has still to retrace its impetuous steps.

Architecture in the past owed much to the ability of the old architects as draughtsmen. Inigo Jones and his long line of successors, were able to reduce their ideas to direct statements of line. The study of the figure, no less than the study of scenery, was part of their mental equipment. Some of the perspectives which annually secure a place on the line at the Royal Academy, are as far removed from real art as chalk is from cheese. Successful architects will say that they have no time to make pictures. Yet the scantiest representation possessing the fire of imagination is far worthier of esteem as a work of art than much that has taken its place. Every architectural student should pay a visit to the Tate Gallery and see for himself what the work of Rowlandson means.

# NOTES

**Manchester Competitions.**

IN our issue of November 18, we made some reference to the competition for the extension to the Municipal College of Technology, Manchester, and to recent Municipal competitions in Manchester in general, and to the fact that some of our leading architects appear to think it would be a waste of time to take part in the competition for the proposed extension to the College of Technology unless they have some definite assurance that the work is really to be carried out, and that the efforts of some one of those competing will not be thrown away. While we are not in a position to make any definite or official statement, we are glad to inform our readers that so far as this competition is concerned, there is every reason to believe that the building will be proceeded with in the immediate future and, from information we have received, we do not think competitors need hesitate to enter for the competition. The building is to cost, in the first instance, we understand, £170,000, and a good deal more at an early date, from which it will be realised that the competition is an important one which should interest some of our best architects

**Detail of Wolverhampton War Memorial: niche figure of St. George, life size.**

MR. W. C. H. KING, Sculptor; MR. C. T. ARMSTRONG, A.R.I.B.A., Architect.

**The R.I.B.A. Street Architecture Medal.**

PERHAPS if the choice of a building to which is to be awarded a medal were to depend on the number of votes secured there would be more interest felt in the matter. The jury which decides this matter has amongst its members those whose opinions would be respected, but these particular members might be incapacitated through some reason or other and then perhaps voting by numbers would be preferable. However, it may be hoped that a little more interest may be shown by a much larger number of votes, and it is definitely stated that one may vote for one's own building!

**The League of Nations Designs.**

THERE will hardly be very wide appreciation of the British designs submitted for the League of Nations buildings exhibited at the Institute Galleries, though one of the designs appears to reach somewhere near the expression one would expect in buildings devoted to the high purpose and dignity of the League. In such a project as this it is much easier to arrive at an orderly and convenient lay-out of plan than to obtain the design for a structure of fine distinction and dignity to erect upon it. For a subject of this kind it is probable that the best students of the School at Rome would be more likely to achieve success than most of our practising architects. Messrs. Milburn, of Sunderland, in their design have achieved something of the dignified simplicity and breadth which such a subject seems to call for, though in the absence of a bird's-eye view their main elevation fails to give quite a true impression of the group as the higher buildings at the back have therein more than their relative value. The application of columns has a distinct value. The antithesis of effect is to be found in the design of Messrs. Kieffer and Fleming, which shows some dignity of handling with square solids and voids, but rather lacking in the grace of expression or beauty of detail. The clever plan by Mr. James Burford showing a central circular hall and all the other buildings radiating from it, the cathedral-like effect of the group designed by Messrs. Carus-Wilson and Mears, and some good features in the design by Mr. Alex. N. Paterson, call for some appreciative note, but we are bound to confess that if what is shown at the Institute is the best which this country contributed, it is rather disappointing.

**Marble Bust.**

MR. W. C. H. KING, Sculptor.

**"Bungaloid Growths."**

WHAT the Dean of St. Paul's referred to as "bungaloid growths" in a recent lecture, well expresses the kind of building spreading through the country districts. Industrialism in one direction, and these growths in another, are closing in on the rural areas, and there is still lacking a public spirit active enough to take the steps that are possible to diminish the evil. There is plenty of complaint, no doubt, from inhabitants of country districts—who have seen the disfigurements wrought in recent years, but little effort is made by them to help themselves. It is not at all unusual to be told that a meeting has been held in one locality or another by the Town Planning Institute, but that nothing has been done! There must be public spirit in the locality as well, and complaint is rather against those who do not take action when help towards it is given by the Institute. The bungalow or shack type of construction, dumped down anywhere and without consideration of the neighbourhood it disfigures, will only be prevented when the public, in conjunction with the Institute's help, take the matter into their own hands, but they must not expect to have it all done for them.

**The Example of Oxford.**

THE purchase of Boar's Hill, through the Oxford Preservation Trust and other tracts of land recently acquired is an example of the possibilities for improvement where there is corporate action taken, and a public spirit to support it. This good example might well be followed elsewhere. It is not only in Oxford that there are historical and architectural associations imperilled through the want of local action to secure them. Oxford has suffered much through the unregulated multiplicity of mean buildings in its neighbourhood, one, not the least of these, being the

sordid approach from the station, disfigured by advertisement hoardings and other unsightlinesses. John Masefield, in a communication on this subject to a contemporary, describes how that "the citizens having made the city impossible, desecrate the country without adding to the life of the country side." It is, indeed, an evasion for the citizen instead of caring for his city, to live in the country and only come into it for his work. The solution does not lie in leaving our cities because they are dirty, noisy, congested and dangerous, but in taking active steps to improve their condition. The ancients planned their cities; we have for years without adequate supervision, or forethought chiefly added hideous accumulations of mean buildings. The larger interests of our national life demand that each should do his part in aiding in whatever ways may now lead to improvement.

**Tate Gallery Decorations.**

WE hope there will be an extension to other young and able artists of the method of employment adopted for the execution of the new decorations in the basement refreshment-room at the Tate Gallery, but recently completed. The work has been carried out by Mr. Rex Whistler, under the scheme inaugurated by Sir Joseph Duveen, who guaranteed £500 for the purpose, the artist being paid a salary of £5 a week during the year and a half he was occupied over the work. The method of payment is one which might well be followed for the decoration of other public buildings. How much more agreeable would be our banks and insurance offices if artists on this weekly wage principle were set to work to decorate them. The halls and restaurants, etc., of our great mercantile houses might yet rival the ecclesiastical buildings of the Middle Ages, were the strength of youthful talent—and there was never more—expended on them. For it is opportunity works the miracle, and we can only know by example what such an impulse can reveal. We much hope, therefore, that Sir Joseph Duveen's fine example will be followed elsewhere and the art of mural decoration receive the popular impulse for which it has long waited.

**American Insurance Union Citadel, Columbus, Ohio.**

MR. C. HOWARD CRANE, Architect; MESSRS. ELMER GEORGE KIEHLER and BEN A. DORE, Associates. (*See page* 850).

**Shopfronts and their Treatment.**

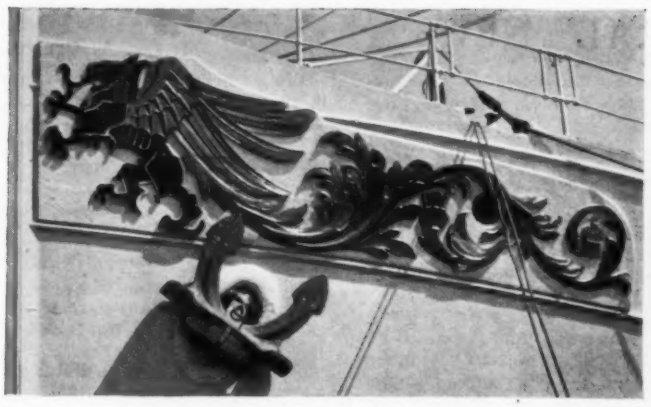
THE November-December issue of *Architecture*, devoted to the shopfront, is now on sale. A number of very recent efforts are included in the selection made—one of which is reproduced on page 865—while there are given examples of most kinds of shop. Mr. Arthur J. Davis's R.I.B.A. lecture on "Shopfronts and their Treatment"—a most comprehensive study of the subject—is included in an issue which also contains some of its usual architectural features.

**Children and Architecture.**

WE are glad to note that the Council of the Royal Institute of British Architects are arranging a series of lantern shows on architecture for children during the Christmas holidays. This is a very good move—unless it should create an extended desire to become an architect!

**Needlework Exhibition.**

THERE is quite a wonderful show of needlework by Miss E. Rawson Constable at the Walker Galleries in Bond Street, and the collection speaks volumes as to the industry and artistry of the lady. The large wool landscape of trees and castle (No. 22) is an admirable decorative panel in low tone of colour, and shows how real may be the value of the stitches in the texture and tone. The little landscape of Harlech Castle (No. 28) is another graphic illustration of the real value of light and tone, which needlework can achieve. The view from the Star and Garter is another noticeable piece. The wool landscape (21) is a fine vigorous piece. The little view from Algiers (62) is a charming little picture, and one wonders at the moderation of its price.



**Carved Panel for Lord Tredegar's S.Y. "Restless." (Yellow Pine, painted Black and Gold).**

MR. W. C. H. KING, Carver.

**Waste Paper.**

ON Monday, Professor C. H. Reilly, F.R.I.B.A., gave an interesting and amusing account of the recent Architectural Association tour to Czecho-Slovakia and Vienna. Several of his remarks, in spite of possible humorous exaggerations, did not lose their point. He described how, in Vienna, the streets were clean and tidy, and is reported to have said that if one only dropped a tram-ticket, a policeman came along with a bared sword and fined one 2s. on the spot. This procedure—whilst at first sight appearing somewhat drastic—is one that might be copied in this country with modifications. The amount expended by municipal authorities annually upon scavenging must reach a large figure and one that might be much reduced were the public only more careful and thoughtful as to the way in which they dispose of their rubbish. At the same time, however, it must be admitted in fairness that the provision of receptacles for rubbish is very poor. The matter is one for concerted action on the part of both the public and the municipal authorities.

**Plaster Sketch Model for Bronze Eagle.**

MR. W. C. H. KING, Carver.

# GENERAL NEWS

**Professional Announcement.**

Mr. James Chapman, M.I.Struct.E., has removed to 435, Mansion House Chambers, London, E.C. 4. Telephone : City 7092.

**A Surveyor's Estate**

Mr. Morgan Young, of Broadhurst-gardens, West Hampstead, and Southampton-street, Bloomsbury, surveyor, left £31,457 (net personalty £30,439).

**Browning Hall, Walworth.**

Browning Hall, Walworth, built in 1789, has been condemned as a dangerous structure. The customary notice has been served by the London County Council on the Warden (the Rev. J. W. Graves). The reason given is that the main wall on the east side has a serious bulge. Browning Hall was first used as an Independent or Congregational chapel, being known as York-street Chapel.

**Honour for Contractor.**

Among the names of the eighteen new Justices of the County of Devon appears that of Mr. G. K. Blatchford, who is the chairman of the directors of Messrs. Blatchford, Ash & Co., Ltd., builders and contractors. Mr. Blatchford has taken an active part in the public life of the district for many years. He was Mayor of Okehampton for three years (1923-1926) and is serving his third term of office as county councillor.

**New Thames Bridge at Marlow.**

Marlow is to lose the iron suspension bridge which connects Buckinghamshire and Berkshire, for, according to the *Daily Telegraph*, it has been declared inadequate to support present-day road traffic. The bridge, which was erected about 100 years ago, is to be demolished, and a new ferro-concrete bridge, faced with stone, is to be built in its place. The new bridge will have a single span, and it is estimated that the scheme for the demolition of the old bridge, and the construction of the new—which will take two years—will cost £70,000.

**Incorporated Church Building Society.**

At the meeting of the Incorporated Church Building Society held at 7, Queen Anne's-gate, Westminster, on Thursday, the 17th ult., the Hon. Sir E. P. Thesiger, K.C.B., in the chair, grants were made towards building new churches at :—Clipstone, All Saints, £200; Grimsear, St. Cuthbert, £450; Newbridge, St. Paul, £150; Wallasey, St. Thomas, £150.

Towards rebuilding the church at Swalwell, Holy Trinity, £150.

Towards enlarging or repairing the churches at :—Ashcombe, £25; Ashford, St. Hilda, £100; Barking-cum-Darmsden, St. Mary, £50; Bottisham, Holy Trinity, £30; Chellaston, St. Peter, £50; Eardisland, St. Mary the Virgin, £25; Llanbadarn-y-Garreg, St. Padarn, £30; Llangurig, St. Curig, £15; Molesey, East, St. Paul, £50; Newington, St. Nicholas, £20; Offham, St. Michael, £20; Ogwell, West, £40; Presteigne, St. Andrew, £50; Stamford, St. George, £40; Watford, St. James, £75; Wennington, SS. Mary and Peter, £30; Winscombe, St. James the Great, £50; Wolvercote, St. Peter, £30.

The following grants were also paid for work completed at :—Arnesby, St. Peter, £25; Ashby, St. Paul (Bal.), £75; Becontree, St. Thomas, £400; Bradoc, St. Mary, £25; Buckshead, £5; Cookham, Holy Trinity, £50; Crosby, St. George (Bal.), £75; Deptford, St. Luke, £70; Fairbourne, St. Cynon, £175; Ipswich, St. Helen, £25; Newton, St. Botolph, £20; Ryhope, St. Paul, £125; Stevenage, St. Nicholas, £100; Teignmouth, East, St. Michael, £30; Tey, Little, St. James, £20; Walworth, St. Peter, £100; Wimbledon, St. Matthew, £200; Wylde Green, Emmanuel, £200.

In addition to the above the sum of £2,314 was paid towards repairs to 41 churches from trust funds held by the Society.

# OBITUARY

**Mr. H. A. Grueber.**

We record with regret the death of Mr. Herbert Appold Grueber, F.S.A., late Keeper of the Department of Coins and Medals at the British Museum, at Bembridge, Isle of Wight, in his 82nd year.

**Mr. R. W. Gibson.**

Mr. Robert Williams Gibson has died recently at his home on Long Island, New York, at the age of 73. A distinguished architect who had been an American citizen for 40 years, he was born at Aveley, in Essex, on November 17, 1854. Entering the architectural school of the Royal Academy in 1875, he won medals and was awarded a travelling scholarship in 1878. With this he travelled in Spain, France, and Italy, and in 1881 he went to Albany, U.S.A., where he was successful in a competition with his design for the Protestant Episcopal Cathedral. Success with a design for the Commercial Bank led him to make a special study of bank buildings. Among many other buildings designed by him in New York may be mentioned the Clearing House, the Botanical Museum, the Coffee Exchange, and St. Michael's Church.

**Mr. John Muirhead.**

We regret to record the death of Mr. John Muirhead, R.S.W., R.B.A., well known as a landscape painter in oil and water-colour. Born in Edinburgh in 1863, the son of John Muirhead, an architect, he was educated at the Edinburgh High School, and began his art studies at the Board of Manufacturers' School. He exhibited his first pictures in 1881 at the Royal Scottish Academy, and since then his work has been seen at the Royal Academy, the Royal Institute, and in various exhibitions at home and abroad. He was elected to the Royal Scottish Water-Colour Society in 1893, and to the Royal Society of British Artists in 1902, and served on the council of each. He was also vice-president of the Croydon and of the Hampshire Art Societies, and chairman of the art executive of the Three Arts Club.

# MEETINGS

SATURDAY, *December* 3.

*London Association of Builders' Foremen and Clerks of Works.*—Annual dinner. Hotel Cecil. 6.30 p.m.

*Institution of Civil Engineers.*—Visit to the works for the new offices of the London Electric Railways at St. James's Park Station, S.W.1.

MONDAY, *December* 5.

*Surveyors' Institution.*—Mr. L. E. Tanner on "Westminster Abbey : its Royal and Mediæval Tombs." 8 p.m.

*Edinburgh Architectural Association.*—Annual Supper and Smoking Concert.

TUESDAY, *December* 6.

*Institution of Electrical Engineers.*—Mr. D. S. Munro on "Modern Electrical Wiring as applied to Small Houses." At the College, Loughborough. 6.45 p.m.

*Royal Institute of British Architects.*—Mr. H. Clifford Smith on "Equipment of a Mediæval House." 5.15 p.m.

WEDNESDAY, *December* 7.

*L.C.C. Central School of Arts and Crafts.*—Sir Banister Fletcher on "French Mediæval Architecture : Gothic Period : Rheims Cathedral. 6 p.m.

*Liverpool Architectural Society.*—Professor L. P. Abercrombie on "Town Planning and City Building of the Knights of Malta." At Bluecoat-chambers, School-lane.

*Leeds and West Yorkshire Architectural Society.*—Mr. H. M. Robertson on "Current Modern Work in Europe." At 62, Woodhouse-lane, Leeds. 6.30 p.m.

*Edinburgh Architectural Association.*—Mr T. Somers on "Kelvin Hall, Glasgow." 8 p.m.

*Institution of Sanitary Engineers.*—Mr. G. T. Cotterell on "Use of Reinforced Concrete in Waterworks and Sewerage." At Caxton Hall, S.W.1. 7 p.m.

*Institution of Civil Engineers.*—Discussion on "Effect of Pumping Operations on Underground Waters," by Mr. H. Lapworth. 6 p.m.

THURSDAY, *December* 8.

*Sheffield, South Yorkshire and District Society of Architects and Surveyors.*—Mr. T. E. Eccles on "Holiday in Egypt." University, Sheffield. 6 p.m.

*Institution of Structural Engineers.*—Mr. M. J. McCarthy on "Piling in the Service of Structural Engineering." 8 p.m.

*Institution of Structural Engineers.*—Discussion introduced by Mr. G. W. Costain on "The Design of Columns for Single Story Buildings to withstand the combined Lateral and Direct Forces." At the Chamber of Commerce, Birmingham. 7 p.m.

*Society of Antiquaries.*—Dr. W. L. Hildburgh on "Some Mediæval English Alabasters and Mediæval Ecclesiastical Metal Work." 8.30 p.m.

# COMPETITION NEWS

**Guildford Elementary School.**

The awards in this competition (Mr. Henry W. Allardyce, assessor) are as follows :—

1st, Mr. G. P. Stainsby, A.R.I.B.A.; 2nd, Messrs. Ernest Sutton & Son, Nottingham; 3rd, Messrs. Collcutt & Hamp.

We illustrate the winning design this week.

**COMPETITIONS OPEN.**

| | Particulars published in | Sending in date. |
|---|---|---|
| Extensions to the Town Hall and Municipal Buildings, Accrington. Mr. Herbert J. Rowse, A.R.I.B.A., assessor | "Builder," Sept. 16 | — |
| Senior School, Kirkdale, Southport. Professor S. D. Adshead, **Assessor**. Premiums of £100, £75 and £50. Apply to Director of Education, Municipal Buildings, Southport. Deposit of 10s. 6d. required. | Aug. 12 & Nov. 18 | 1928 Mar. 19 |
| Concrete House Designs for Directors of the Portland Cement Selling and Distributing Co., Ltd., in conjunction with the *Daily Mail*. Competition in two sections, "A." for designs for houses in concrete not costing over £1,750; "B," for houses not costing over £750. Premiums in each are : £250, £150 and £100. Messrs. Maxwell Ayrton, W. E. Riley, Douglas Tanner and Baker and Mallett, assessors ..... | Oct. 21 | — |
| Senior Boys' and Girls' School, Loughborough, for the Education Committee. Premiums of £100, £50 and £25. Mr. Fred Broadbent, F.R.I.B.A., assessor. Apply to Mr. E. A. Jarratt, Secretary, Education Offices, Loughborough. | Aug. 5 | Jan. 11 |
| Boys' College for Governors of John Watson's School, Edinburgh. Mr. John Keppie, F.R.I.B.A., assessor ..... | Nov. 4 | — |
| Municipal Offices, Shops, etc., in Narrow-street, Peterborough, for the City Council. Premiums of 500 guineas, 250 guineas and 150 guineas. Sir R. Blomfield, R.A., assessor. Apply Mr. W. H. A. Court, A.M.I.C.E., City Engineer and Surveyor. Deposit £1 1s. required ..... | Nov. 4 | Jan. 31 |
| Municipal College of Technology, Manchester, extension. Messrs. Alan E. Munby, H. M. Fletcher and Francis Jones, assessors. Premiums of £500, £400 and £300. Apply Mr. P. M. Heath, Town Clerk. Deposit £1 1s. required ..... | Nov. 4 | Mar. 30 |
| Colony at Meanwood Park, Leeds, for Mental Defectives, for the Corporation. Mr. John Kirkland, F.R.I.B.A., assessor. Premiums of £200, £150 and £100 ..... | Nov. 11 | Dec. 10 |

**Extension of the Royal National Orthopædic Hospital, Bolsover Street, W.: New Main Entrance.**

MESSRS. H. F. MURRELL and R. M. PIGOTT, FF.R.I.B.A., Architects. (*See page* 857).

# CORRESPONDENCE

*[While we are glad to publish letters on professional and other matters of interest to our readers, it must be understood that we do not necessarily endorse the remarks of correspondents, who will oblige us if they will express their views as briefly as possible.]*

### The Preservation of St. Paul's Cathedral.

SIR,—In reply to your invitation to answer in *The Builder* the remarks of "Inquisitive" concerning my book, "The Preservation of St. Paul's Cathedral," I cannot help feeling that you must be mistaken in describing him as "an architect of standing, who has made the subject of ecclesiastical architecture a life-long study." Surely an architect of standing would be man enough to sign his name, and a student of church architecture would be capable of comprehending a geometrical diagram.

I recognise "Inquisitive" by certain infallible signs, such as his tendency to root out isolated sentences from a book instead of reading it as a whole, and by his stupid love of destruction. How much attention his frothings deserve may be indicated by a single quotation: "The Whispering Gallery is a balcony, and a projecting feature which incidentally strengthens the wall, and therefore cannot really be described as 'standing out several feet over the internal space.'" Why not? Is it not the function of a projecting feature to project, and of a balcony to stand out over a space? But it is wonderful that "Inquisitive" can put words together at all; we must not expect him to understand their meaning. That he is unable to recognise negative from positive is seen again when he whips himself to fury over my alleged disrespect for Sir Christopher Wren! But is it more honouring to Wren to inquire diligently into the needs of his building, as I have done, with the object of preserving his veritable inventions by first discovering and then by supplying the structural deficiencies noticeable after two centuries, or to leave his wonderful dome so ill repaired and so ill supported that it will need to be demolished?

It was this proposal in the St. Paul's Commission's Second Interim Report which made me realise that a vigorous public protest would be necessary, though, sir, as you must remember, my writings on the subject had appeared from time to time in *The Builder*, and had been discussed in a friendly spirit with the surveyor to the fabric. It was not until Mr. Mervyn Macartney's signature appeared at the foot of the inadequate and dangerous patching and grouting scheme that I suspected for a moment that modern principles and practices of scientific analysis and repair would be disregarded or overruled by considerations of immediate expediency, such as the execution of repairs "without serious disturbance to the services."

As the mild language of friendship had proved powerless, it became necessary to apply the goad of more resolute speech, and to show up a feeble, unscientific, and dangerous scheme for what it was worth. "Inquisitive" asks: "Is Mr. Harvey a competent critic?" "Does he know everything about St. Paul's Cathedral or its design?" "What is the nature of his comprehensive scheme of conservation?" Now whether I am a competent critic is a question that does not depend upon my *ipse dixit* for an affirmative answer as "Inquisitive" suggests. The custodians of St. Paul's have added to their original patching scheme several features of which I foretold the necessity, as a comparison of the Second Interim Report with the recently published Fifth Progress Report will show (see *The Builder*, November 18. The "Second Interim" and "Final" Reports are reproduced in my book.) The use of reinforcement, for example, was not so much as mentioned in the original scheme. Well, unless these additions are mere frivolous waste of money—and the worst enemy of the Dean and Chapter would hardly venture to suggest that—they are the strongest practical indication that the man was not far wrong who showed, three years ago, that they were wanted.

In reply to the second of these questions, I ask in turn, "Did the St. Paul's Commission?" It is unnecessary to ask, "Does 'Inquisitive'?" The nature of my comprehensive scheme, its purpose and confessed preliminary character, are all explained in my book, where men of sense and goodwill may read. The value of some of my proposed devices is indicated practically in the model illustrated on pages 114 and 115, and the suggestion is made that the National Physical Laboratory at Teddington should be consulted in regard to further, more detailed, investigations with models. In the meantime, students of arch and buttress construction should make models for themselves, if they want to get the utmost value out of my book, see what I am driving at, or understand how the work now proceeding at St. Paul's resembles, or differs from, my suggestions.

"Inquisitive" cannot make head nor tail of one of my diagrams, and thinks that "It does not appear to correspond with other sections." But as he cannot read plain English, and has to ask where the particular section occurs, though this is stated under the figure, his criticism is simply an admission of ignorance.

His further questions concerning detailed dimensions and calculations should be addressed to the custodians of St. Paul's, who are now undertaking an accurate survey nearly three years after I insisted upon the imperative necessity of it as the basis of certain analysis and calculated repair, and gave detailed instructions how to set about it. Better late than never, perhaps, but that it is still unfinished, nearly six years after the appointment of the St. Paul's Commission, is a strong indication of the need of critical interest from outside the walls of the Cathedral.

"Inquisitive" gets the cart before the horse once again in his statement that my proposed measures would "pare off the 32 counterforts of the dome." Against the Commission's statement that "these buttresses do not play an important part in transmitting weight to the bastions, nor, in your Commission's judgment, is it desirable that they should," I entered a vigorous protest on page 143, and the importance of strengthening and rendering these 32 counterforts effective is insisted upon in other pages, as the index directs. . . . What a critic!

To set against the minor temporary adjustments that have to be made in the insertion of any comprehensive scheme of repair, and about which "Inquisitive" makes so many fantastical misstatements, it must be remembered that successive custodians have permanently altered stairs and passages for convenience at their own discretion, and that the patching and grouting scheme of the St. Paul's Commission was saddled with the threatened demolition of the whole dome!

WILLIAM HARVEY.

### A Defence of Quantity Surveyors.

SIR,—With reference to your comments on Messrs. Nicholson's book (p. 805, November 25), there is a very great deal to be said on the other side. If the quantities are taken out in the architect's office, by a properly trained assistant of course, all difficulties of construction must be met and cleared up while the drawings are at an early stage, and, for his own sake, the architect roughs out a good many half-inch details obviating the cropping up of problems later. There is much less chance of conflict between drawings and the various documents and there is someone in thorough touch with them all. I am certain the practice tends to greater economy, as alternative solutions can be discussed and settled right away.

I have no bias against quantity surveyors. My experience of them has been happy; but any compulsory restriction is to be deprecated. A properly qualified man, perhaps a member, by examination, of the Surveyors' Institution, should not be debarred from exercising his skill because he happens to be a practising architect or an architect's assistant.

I think builders' federations are strong enough to refuse to tender on the legendary, but perhaps fictional, documents quoting "one staircase complete." Nor are errors confined to quantities prepared in architect's offices.

NORTHERN FELLOW.

### Art and the Architect.

SIR,—While architects are strenuously doing their level best to combat the present building shortage, one hears on all sides disparaging remarks about the plainness of their work. Most people do not realise that utility to-day is the main theme, and not æsthetic design; although, of course, down the ages, architects have been and are excellent artists. The sketch books of V. De Honnecourt, Brunelleschi, Bernini, Inigo Jones, Hawksmoor, Wren, Gibbs, and Soane will easily prove that many of these men could have excelled as artists only.

CHARLES MATTINGLY.

### Death-Watch Beetle.

SIR,—With regard to the correspondence in *The Builder* on the depredations of the death-watch beetle in pine, I have recently been investigating a case of an ordinary deal floor, about 40 years old, which has been attacked by this pest. I found that the boards affected were those containing sap wood and that others free from sap were scarcely touched, even though they came between the sappy boards. One board with a waney edge was so badly eaten that it gave way under a footstep, thus calling attention to the damage that had been going on unsuspected in the floor. This experience corroborates the statement in the pamphlet referred to by Mr. Max Clarke.

HERBERT KENCHINGTON.

### Answers to Questions in Competitions.

SIR,—The correspondence which you have published with reference to a recent competition shows the need to emphasise, in a general way, the suggestion that competitors' questions deserve more serious consideration than is often given to them in architectural competitions. This is undoubtedly the feeling amongst a number of architects who engage in competitive work. Besides the correspondence referred to, the matter was mentioned, indirectly, in an article in *The Builder* a few weeks ago, and is worthy of the attention of the Competitions Committee of the Institute.

After carefully drafting conditions, it must be boring to answer numbers of simple questions, but as these answers become, in fact, so many additional conditions, they should be as helpful and clear as the general clauses of the conditions issued. In view of the immense total of labour involved, in even a small competition, surely no pains should be spared to avoid any possible misunderstanding on the part of the most inexperienced competitor.

ANOTHER A.R.I.B.A.

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### Skyscrapers in the U.S.A.

A correspondent writes:—"In your issue of October 28, a brief mention is made of a new American skyscraper in New York, and it seems to be suggested that a new skyscraper is a comparative rarity. It is not generally realised that all over the States, including towns we have never heard of, there are rising great and magnificent buildings, any one of which if built in England would cause a sensation. Many of these buildings are really quite beautiful, and for the interest of your readers I enclose a photo of a recently erected building in Columbus, Ohio, a really magnificent and virile piece of architecture." [The illustration referred to is on page 847.]

# THE ROYAL INSTITUTE OF BRITISH ARCHITECTS

### Lecture to Building Trade Workers on "The Architect."

THE third series of informal illustrated lectures on architecture confined to workers in the building trades was opened at the R.I.B.A., 9, Conduit Street, on Wednesday, November 23, when Mr. Martin S. Briggs, F.R.I.B.A., read a paper on the subject of "The Architect." Mr. L. Sylvester Sullivan, F.R.I.B.A., presided. The lecture was well attended, and it is hoped that this series will arouse great interest.

Having dealt with the origin of the word "architect," and with the architects of Greece and Rome, the lecturer, coming to England in the Middle Ages, said that quite eminent and worthy people—Ruskin among them—had tried to prove that there never were any architects in Gothic times, that wonderful buildings just grew out of the ground without any professional design or direction, and that in those days a simple rustic mason could produce a marvellous work like Westminster Abbey or the cloisters at Gloucester without any specialised training, without any plans or specification, all because he was divinely inspired.

Moreover, these same writers, who did not admit the existence of the medieval architect, accepted the attribution of many of our finest buildings to ecclesiastics of various kinds. They readily swallowed a statement on some old parchment or stained-glass window that Bishop this or that *built* a church. The Latin word generally used was "fecit," that was, "made" it, but the real meaning implied was, he thought, that he *caused it to be made*, and anyway the Latin did not say that he *designed* it.

In modern times the hostile attitude of Ruskin and his followers had been mainly due, he thought, to the jealousy of the amateur towards the professional in any walk of life.

But it went much further back than Ruskin. In the eleventh and twelfth centuries, when innumerable buildings were being erected in what we called the "Norman" style, architecture and the other arts, together with literature and culture generally, were largely under the control of the Church, and though he believed that even in those days in England there were men trained as architects in the monasteries, the Church also provided the scribes who wrote the histories from which we learned the few available facts about the erection of these buildings and naturally the monkish scribe made more fuss of the important bishop who ordered the church to be built and acted as "chairman of the Building Committee," as we should say, than of the humble expert who actually carried out his orders. But in Italy, even at that time, the architects' names were carved on the church-doors, e.g., at Pisa and on many other cathedrals.

It was in the twelfth century, however, in England, that the Church began to employ laymen to design its buildings, and from that time onwards there is abundant proof that independent practitioners—whether we call them "architects" or "master-masons"—came to be employed more and more until the monkish architect gradually faded out. But the monkish scribe remained, and he probably gained much satisfaction out of glorifying his employer at the expense of the lay-architect, by telling us all about the Bishop and not even the name of the actual designer.

We now know the names of more than a thousand medieval architects in Western Europe; we know the name of every man in charge of Westminster Abbey from the beginning. Whatever he was called in the Middle Ages, the man who did the architect's job existed, and his identity could not be concealed any longer. But he was hardly ever called an *architect*. The most common title was simply "Master," not master-mason, and it might be used in its English or its Latin form in England, just as we found it in French, Spanish, Italian, or German abroad.

Dwelling-houses in the Middle Ages were almost negligible as architecture, and churches and castles—the only buildings of importance—were more than three-quarters masonry. The carpenter and the plumber and the glazier were really only accessories, as a rule, so that the directing person on any large building would have to be, above all, a master of mason-craft. He might also have instructed the master-carpenter about the design of the roof-trusses, or he may have confided that to him as a modern architect might hand over certain details to an assistant. But it did not follow that, because the "Master" served an apprenticeship at the bench, he had no other training. We had evidence to the contrary. In the State Library in Paris there was an architect's sketchbook of the thirteenth century, which showed us that one particular man, Villard de Honnecourt, went on sketching tours, picking up ideas all over Europe for his own buildings, that he could draw plans and details, and that he was not only an expert draughtsman, but that he had a good knowledge of construction and geometry.

The number of old architects' working drawing which had survived was certainly not large, but there was a reason for that. In those days parchment was scarce, so that when a drawing had been used, unless of course it was worn to rags—as would usually happen then as now—the ink was carefully rubbed or washed out and the parchment was used again, perhaps for an illuminated manuscript. Examples of this treatment had been preserved.

Another reason why so few drawings survived was because plans were regarded simply as a means to an end, not as beautiful things in themselves, and would be destroyed when they had served their purpose. The idea of elaborate framed perspectives for the Royal Academy or to hang on the architect's office wall had not occurred to the medieval mind. But we *did* know of sufficient surviving drawings to be quite sure that the medieval architect was a competent draughtsman. He used compasses and ruling pens, a rather thin line and ink that was, at any rate, rather grey or brown in colour, and if the drawing was a large one he had to stick two or three skins of parchment together.

There was an enormous elevation 10 ft. high, to a scale between 4 and 5 ft. to an inch, of one of the towers of Cologne Cathedral, of which a facsimile was in the Library of the R.I.B.A.; and quite a number of others in different parts of Europe, including England. The most interesting that he had ever seen was a whole set in the Cathedral Museum at Siena, in Italy. These included a competition design, made in the year 1339, for the tower or campanile of the cathedral. It was 7 ft. high and about a foot wide, to about ¼ in. scale, drawn in brown ink, with instruments in strict orthographic projection, and carefully coloured to show the actual tints of the variegated marble facing. It was a highly finished detail drawing, quite modern in type.

Now, as it could be proved that medieval architects could draw, could not we, as practical men, go a step further, and say that anybody who would try to erect an elaborate building without a plan would be simply a fool? Try to build even a subsidy cottage without a plan, and one could see what a muddle one got into over the staircase and roof. If we admitted this, we might conclude that somebody prepared plans for every medieval building of importance, and that somebody must have been the man who was really responsible for the design. That somebody, "the architect," generally worked continuously on one job at a time, like a clerk-of-works, and had his "office" on the job. Without roads or railways or telephones, obviously he could not tear about all over England. But he did not always confine his attention to one building: he undertook consulting work elsewhere sometimes, and occasionally he ran several jobs at one time, like a modern practitioner. When he had finished, say, a cathedral or even while he was still busy on it, another cathedral chapter might bid for his services. He was quite an important person, and we often found that the "Master" was given fur robes of esquire's degree, and a good place in society.

In the Middle Ages, because dwelling-houses and shops and inns were mere sheds, building consisted mainly of castles for the king and his noblemen, cathedrals, monasteries, and parish churches. The employer was therefore either the king, or a great nobleman, or a cleric, and he employed a steward or controller or treasurer, who bought most of the material and paid the workmen through their respective masters—the master-mason, the master-carpenter, the master-smith, and so on. William of Wykeham, often described as the first great English architect, seemed to have been an official of that kind, not an architect at all. Besides the controller, there was often a clerk of the works, and Geoffrey Chaucer once occupied that position, though rather as an amateur, he (the speaker) thought.

The man whom we should now call the architect was sometimes independent of the master-mason and above him; sometimes he combined both functions, and in that case he had to buy some of the material and pay all the other masons their wages.

He (the speaker) believed that the design of buildings could not have been done by a guild, as was sometimes stated. Men were human beings in those days as now, and somebody must always have made the design, and somebody else must have directed the building operations in general. (No committee could have designed a cathedral.) So where one man did both the designing and superintending, no matter whether he started life as a mason or whether he undertook only one building at a time, he (the speaker) maintained that we might call him the architect.

The lecturer, in the concluding part of his paper, referred to the architects of the Renaissance and later periods.

Following the reading of the paper there was a brisk discussion, in which the Chairman, Mr. Hugh Davies, Mr. Jarman, and a number of other speakers took part, and the lecturer subsequently answered a large number of questions.

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Following are notes from the Minutes of the Council meeting on November 7:—

*Presentation of Drawings to the R.I.B.A.*—The Council passed a cordial vote of thanks to Mr. Sigismund Goetze for his kindness in presenting a selection of drawings and sketches by Alfred Stevens to the Institute.

*International Congress at Amsterdam.*—A report was received from Lt.-Col. H. P. Cart de Lafontaine, A.R.I.B.A., the R.I.B.A. delegate at the recent International Congress of Architects held at Amsterdam. The hearty thanks of the Council were conveyed to Lt.-Col. Cart de Lafontaine.

*The Fellowship.*—The Council, by a unanimous vote, elected Mr. G. de C. Fraser, of Liverpool, to the Fellowship under the powers defined in the Supplemental Charter of 1925.

### R.I.B.A.: Christmas Holiday Lectures on Architecture for Children.

The Council of the R.I.B.A. are arranging a series of lantern shows on architecture for children during the Christmas holidays. Detailed particulars of the scheme will be published at an early date.

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# THE ARCHITECTURAL ASSOCIATION

Mr. GILBERT H. JENKINS (President) occupied the chair at the meeting of the Architectural Association on Monday evening, when PROFESSOR C. H. REILLY, F.R.I.B.A., gave an account of the recent A.A. tour to Prague, Vienna, and Salzburg.

### New Members.

At the opening of the meeting, the PRESIDENT announced that there were 13 nominations for membership, and the following were elected members :—

Mr. A. D. Gamble.
Mr. D. L. Milner.
Mr. O. Vaughan.
Mr. R. G. M. Chase.
Mr. R. C. Tuely.
Mr. W. R. Wooding.
Mr. K. K. Tan
Miss Z. T. Maw.
Mr. M. A. S. Dugdale.
Mr. K. F. L. Farnfield.
Mr. E. C. Kent.
Mr. W. J. R. Penrose-Thackwell
Mr. D. Murchland.
Mr. T. W. Barton.
Mr. G. V. Bird.
Miss F. M. C. Raymond.
Mr. B. P. Westwood.
Mr. M. T. Sein.
Mr. G. W. Nelson.
Mr. V. Harding.
Mr. J. P. Darby.
Mr. J. L. Merry.
Mr. W. R. Hutcheson.
Miss M. L. Atkins.
Miss A. M. Robertson.
Mr. G. A. Butling.
Mr. E. Garthside.
Mr. E. Mayorcas.
Miss A. R. Gascoigne.
Mr. H. C. Boardman.
Mr. E. A. Grove.
Miss P. D. Jackson.
Miss R. E. Benjamin.
Mr. B. A. Hebeler.
Mr. P. R. Pulham.
Mr. W. W. Kenyon
Mr. R. T. F. Skinner.
Mr. W. Wolkoff
Mr. W. J. McGrenera.
Mr. J. P. MacCann.
Mr. W. A. Dorey.
Mr. C. J. Searle
Mr. J. B. Brandt.
Mr. H. S. Luke.
Mr. S. C. G. Lambert.
Mr. R. A. C. Simpson.
Mr. M. Aya.
Mr. L. A. Drake.
Mr. R. F. Henniker.
Mr. R. Bruce.
Mr. M. W. Haigh.
Mr. E. W. N. Mallows.
Mr. J. W. Hoare.
Mr. A. V. Foley.
Mr. S. G. R. Marsh.
Mr. J. F. D. Wylson.
Mr. A. I. K. Sinclair.
Mr. T. W. Marwick.
Mr. M. R. Hoffer.
Mr. M. J. Hamilton.

### The A.A. Excursion.

PROFESSOR REILLY then gave an interesting, and frequently amusing, account of the excursion, illustrated with many lantern slides of the more interesting places and buildings visited by the party.

After describing the adventures of the party on the way to Czecho-Slovakia, he dealt with Prague and its buildings. On arrival here, as elsewhere, the party was met and welcomed by a deputation of leading architects of the city; in some cases they were accorded an official welcome by the municipality. The day after their arrival they visited the older part of the city, which contained many gorgeous mediæval and Baroque buildings, overlooked by surrounding hills. A fine wide river flowed through the town, crossed by a magnificent series of bridges, including a beautiful mediæval bridge with a great tower at each end and with thirteen great cutwaters; each of the piers contained a magnificent group of Baroque figures; altogether it was a most romantic bridge. Most of the old buildings in the town were very fine, but he was not much impressed with the modern buildings.

On the following day they visited the Prague Town Hall, and were shown the town-planning scheme for the city. At present Prague had 800,000 inhabitants, but in the town-planning scheme they were looking ahead to the time when the population would be 2,000,000 and had already arranged where all the people were to live in ten years' time.

At Vienna they first saw the famous Ring, which he considered to be more metropolitan than anything he had seen. It was formed about 1860 (not a really good architectural period), but it had a fine air of spaciousness and dignity. Although Vienna was a poor city, it contrived to keep up appearances very well; the streets were clean and tidy, and drastic steps were taken to keep them in that state. All the public buildings were set in fine open spaces. He thought they were all impressed with the intimate way in which they had become familiar with Vienna through the Rickards drawings. After seeing the seventeenth- and eighteenth-century Baroque work, they passed on to the modern post-war building schemes, which were particularly exciting after the older work. It was interesting to note that these houses had not been built on any loan or subsidy system, but the cost had been raised by direct taxation, with the result that there were no sinking funds or capital charges, and a small flat could be rented for 4s. 9d. a month. These flats were built to an extraordinary scale, in large blocks many stories high, each of which seemed bigger and finer than the Adelphi Hotel at Liverpool. Generally the flats were covered with stucco, while the ground floors were often treated by hammer-dressing the surface of the concrete, which gave it a fine, strong, monolithic appearance. Some of the blocks were built on sloping sites, so that there were terraces and set-backs. In all the courtyards a well-placed statue was to be found. All the houses were clean and tidy. The grass grew untouched; in many places flowers grew in public spaces untouched, which was an inconceivable state of affairs in England. The top floors of the blocks were often occupied by laundries and public rooms. The architects had produced remarkable results, in spite of the difficulties they had to contend with; all the windows, for instance, were double, owing to the coldness of the climate in the winter. The buildings had little decoration or ornament, but what decoration there was had a very charming effect. The selection of the architects for the housing schemes was of interest, for they were all chosen by one elderly gentleman who had served the Government before the revolution as a director of opera houses. When the Labour Government came into power he was retained as a kind of art adviser to the Burgomaster, and it was he who advised which architects should be employed. It was a responsible position, which gave him great power; fortunately he was a man of good taste, and the result seemed quite satisfactory. In Vienna the architects were paid a fee of 2½ per cent. on housing work, the building being carried out by direct labour under the direction of an architectural engineer.

Of particular interest in Vienna was a technical school to accommodate 6,000 students, partly a hostel where some of the students lived and partly an ordinary technical school. It was on a scale to which we were not accustomed in this country. In the courtyard was the usual single piece of sculpture, on a hammered concrete base which every one of the party mistook for granite until they made a close inspection. The hammer-dressing of concrete seemed a very fine method of expressing the material, and gave it a fine monolithic appearance. The whole of the building was in concrete, and in the interior no attempt had been made to hide the beams or to give them any expression other than they got from their constructional forms. There was also in Vienna an institute where derelict children were collected by the municipality. There was a law in the city under which every house was inspected, and if the inspectors were of the opinion that the children were not being properly cared for they were taken away and kept at this institute before being passed on to learn a trade.

They found Salzburg a delightful town, with a great castle on a hill, a fine river, a few palaces, a Reinhardt theatre, and good churches. The whole town was on a noble scale, although it was quite small.

Throughout the lecture Professor Reilly paid many tributes to the excellent manner in which the excursion, down to the smallest detail, had been arranged by Mr. Yerbury.

### Discussion.

Mr. W. H. ANSELL proposed a vote of thanks to the lecturer, who, he said, they honoured for the great work he had done at Liverpool. Professor Reilly had cast a glamour even over smoky Liverpool. He (the speaker) felt that the architects of the new Vienna housing schemes, with their loggias and statues, thoroughly enjoyed themselves. They were not bored by their work, and the result did not bore those who saw the buildings. Too often English architects were bored with their work, and the result was that they bored everyone who saw it. There was a real lesson to be learned from the modern Viennese work and also from the Baroque, which was so full of life.

Mr. AUMONIER said from the carver's point of view he thought the work they had seen abroad was essentially individual; it had the appearance of being the work of an individual craftsman and not of a firm. The placing of the decoration and the general disposition of the buildings invariably seemed exactly right. The buildings were not over-elaborated, but the ornament was always good; it seemed, indeed, that it was too good to have been done by an architect, and that it might have been designed by a sculptor as a background for his work! They had seen some of the interesting examples of concrete sculpture, which seemed to have considerable possibilities from the craftsman's point of view.

Mr. STANLEY HAMP said in the modern work they had seen there was a delightful freshness and appreciation of decorative form that he would like to see more used in this country.

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# THE BEAUTY OF THE LAKES

MR. E. GUY DAWBER, A.R.A., PP.R.I.B.A., a vice-president of the C.P.R.E., has addressed a letter on this subject to the *Times*. Referring to the urgent need of taking steps to prevent the destruction of its beauty by the use of unsuitable building materials, especially in the roofs of new houses, he says :—"The position would be absurd were it not so deplorable; for while Kent, Surrey and Sussex, where the land is warm in colour, are suffering from an influx of blue and grey slate from the North, Westmorland and Cumberland have now to put up with the advent of glaring red tiles from the South—materials in both cases entirely at variance with the traditional character of the buildings of those counties. The green slate of Cumberland and Westmorland is one of the best roofing materials in existence, harmonising beautifully with the stone walls and the characteristic greyness of the country.

"If only the people of these districts would realise the infinite harm that is being done to the beauty of their countryside by injudicious building they would surely try to prevent its continuance. A town-planning scheme is in process of being carried through, and, in amalgamation with the adjoining local authorities, the district will be covered by a regional plan. At present these authorities have no control over the design, however bad, or the materials, however unsuitable, of any new buildings, but under the Town Planning Acts they can adopt a model clause prepared by the Ministry of Health giving them this power, and can in effect make this operative from the time of taking up the scheme. If the local authorities in the Lake District coming under this regional plan will agree to adopt the clause preventing the erection of buildings out of harmony with their surroundings, the moral effect would be great, and would do much to check what is nothing short of a disaster."

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### British Museum Appointments.

Amongst the appointments made by the Principal Trustees of the British Museum are :—Mr. Reginald Allender Smith to be Keeper of British and Mediæval Antiquities, in succession to Mr. O. M. Dalton, who retires in December. Mr. Edgar John Forsdyke to be a Deputy Keeper in the Departments of Antiquities, in succession to Mr. R. A. Smith.

# ACOUSTIC DESIGN

MR. F. R. WATSON, of the University of Illinois, in an address on this subject given on October 6, in Chicago, at a meeting of the Church Bureaux of Architecture and the Committee on Church Building of the Home Missions Council, said the acoustic adjustment of rooms was a subject of modern development, and became an acute problem when large auditoriums were built with steel and plaster constructions. As a result, only a few architects were informed concerning scientific progress in the subject. Active progress in the acoustic adjustment of rooms had been stimulated by commercial companies, who had developed various products that had acoustic merit in greater or less degree. What was desired for ideal acoustics was that the sound reaching an auditor in any part of a room should be of suitable loudness and distinctness for comfortable hearing, with an elimination or control of echoes, reverberation, "dead spots," and other faults. To a great extent, it was possible to secure such ideal conditions.

In the open air the utterances of a speaker progressed with practically no distortion, and perfect acoustics were obtained. But only a few people standing on the level ground around the speaker could hear him, because a large part of the sound proceeded upward and was lost, and the sound proceeding sideways was rapidly absorbed by the auditors' clothing. An auditorium improved this condition. A raised platform for the speaker allowed all the auditors to see him and hear him. By means of a balcony the auditors at the outside edge could be brought nearer. The enclosing surfaces served to reflect the sound going upward and thus increased the loudness for auditors in all parts of the room. While the auditorium thus produced some advantages, it also created defects. For instance, the reflected sound, which was the chief difference between open-air acoustics and auditorium acoustics, might produce serious trouble; so that a study of its action was the most important consideration in obtaining good acoustics in a room.

Sound travelled out in spherical waves from a speaker or a musical instrument with the great velocity of 1,120 ft. per second at ordinary temperatures—about as fast as a rifle bullet. As a result, sound would be reflected back and forth in an auditorium about 30 times a second between walls 40 ft. apart, and because of these rapid reflections, would fill an auditorium of usual size in a small fraction of a second, thus ensuring a loudness in every part of the room.

A speech sound, such as any one of the words uttered by a speaker, required about

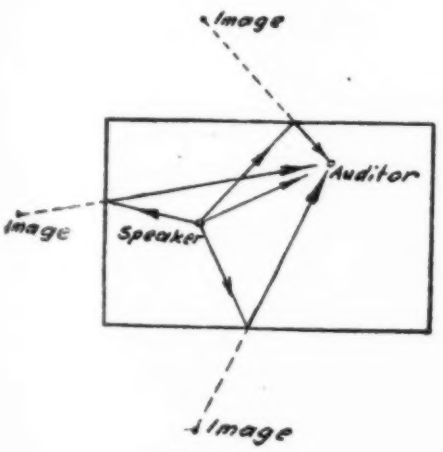



FIG. 1

one-tenth of a second for its completion, and travelled 112 ft. before the word was finished; which meant, in the open air, that a speaker would be at the centre of a sphere of 112 ft. radius that would be filled with the sound of the word. In an auditorium the sound waves would be reflected several times in travelling 112 ft., so that, instead of a sphere, there would be overlapping bundles travelling in every direction, that completely filled the room with the sound of the word before the speaker finished saying it.

These overlapping sounds might produce confusion. For instance, sound was reflected from the wall behind the speaker in much the same way that light was reflected from a mirror—that was, the speaker had a fictitious image behind the reflecting wall that imitated his speaking. It was then the same as if two speakers said the same words at the same time. Imagine the effect on an auditor. If the two speakers were close together, the effect was beneficial; but if far apart — as would be the case if the speaker were some distance in front of the reflecting surface—a blurring of speech sounds occurred, and it became difficult to understand. Not only was sound reflected from the wall behind the speaker, but from all the other walls, so that an auditor listened not only to the real speaker but to a large number of fictitious speakers, due to the reflecting walls. The possibilities of confusion were easily imagined. (See Fig. 1.)

Modern investigation showed that walls at a distance of about 25 ft. or less from a speaker produced beneficial reflection of speech sounds. This showed the importance of having a speaker located near reflecting walls. Walls more than 25 ft. distant were sources of trouble, but fortunately their effect got smaller with increasing distance, because the imaged speaker was now further away from the auditor. If a wall, particularly a curved wall, was at some distance from the auditor, the reflected sound might arrive long enough after the direct sound to produce an echo; that was, a distinct, disturbing repetition of the direct sound. Reflecting walls that produced noticeable defects might be padded.

The most serious defect of reflection was the prolongation of sound in a room, called reverberation. When sound arrived at a wall or ceiling, it was reflected, absorbed, and transmitted in varying amounts depending on the nature of the reflecting surface. A hard plaster wall, for instance, reflected 95 per cent. or more of the incident sound, and therefore absorbed but little; whereas a layer of hair-felt, one inch thick, might absorb 55 per cent. with a correspondingly smaller reflection. If a room was bounded by plaster, glass and wooden surfaces, very little absorption took place and the sound might be reflected 200 to 300 times before it became inaudible. This meant that the utterances of a speaker would overlap and produce confusion for listeners. What was desired was to have each utterance rise to a suitable intensity and produce its effect on the listener and then die out so as to leave the field free for the succeeding utterance.

The use of carpets, hair-felt, and similar materials increased the absorption, and furnished the means for controlling the reverberation in a room. An audience was an excellent absorber of sound due to the clothing worn. In the winter time, when overcoats and heavier clothing were used, the absorption was greater than in the summer time. An auditorium filled with a large audience might be satisfactory, but it was the modern practice to install absorbing material to avoid defective acoustics for small audiences or for rehearsals in the empty hall.

An all-important question arose as to the amount of sound-absorbing material that should be installed for good effect, and this had been answered by obtaining the opinions of auditors regarding auditoriums already possessing good acoustics. It was found for best effect that a standard sound should die out in two seconds or less, depending on the size of the auditorium. Calculations could then be made to determine how much material would be needed for the auditorium to secure the required time of reverberation.

Having determined the amount of material needed for optimum acoustics, the question arose as to where it should be placed. Experience showed that some walls were more likely to give troublesome reflections than others. For instance, a rear wall might re-

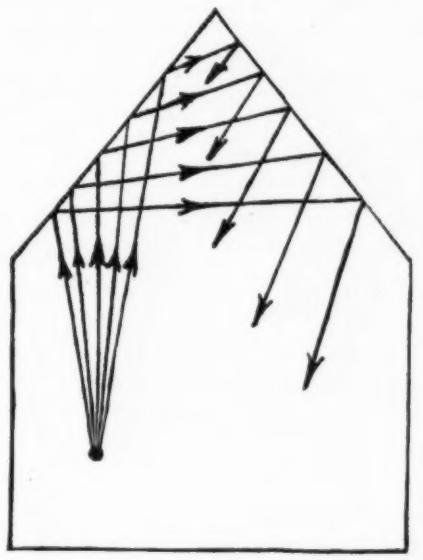


FIG. 2

flect sound to an auditor near the speaker and produce an echo; that was, a repetition of the direct sound that was noticeable. That result followed if the time interval between the direct and reflected sound was about one-tenth of a second or more, for which the difference in path of the two sounds was at least 112 feet, and the reflecting wall was about 56 feet distant from the auditor. With the wall at a greater distance, the echo would be worse. If the reflecting wall was curved, which was often the case, a focussing action followed and the echo was more pronounced. To reduce this defect it was desirable to place sound-absorbing material on such reflecting walls, particularly those at some distance from the stage. This practice found commendation for another reason. Experiment had shown that better acoustics were obtained if the walls about the speaker or musician were left reverberant while the absorbing material was placed on the walls nearer the audience. Under those circumstances, the speaker or musician found that it was "easy to speak or play," and the auditors found the listening satisfactory.

The shape of an auditorium was a matter of consideration. Generally speaking, a rectangular shape was preferred. Curved walls produced eccentric actions on sounds and might set up bad echoes. Balconies were usually advantageous acoustically, since they tended to break up sound in the otherwise large space. Gothic ceilings were beneficial to acoustics, because they reduced the possibility of echoes, and because sound-absorbing material was more effective on such surfaces than on a flat ceiling.

Large auditoriums were more difficult for good speaking than small ones. The reflecting walls were some distance from the auditors, with possibilities of echoes and blurring of speech. Electric loudspeakers served to amplify a speaker's voice, but they might produce some distortion. Music was an advantage in large rooms, more so than a speaker, because musical instruments had possibilities of greater volume of sound. (See Fig. 2.)

Music required the same acoustic adjustment of auditoriums for optimum conditions as speaking. Increasing the sound-absorbing material beyond the optimum made the room deader, so that music sounded dry and lifeless, but the speaking became more distinct. If less sound-absorbing material was used

than required for the optimum, music still sounded good, but speaking rapidly got worse.

The important requirements for good acoustics in a room might be enumerated as follows :—

1. The reverberation or prolongation of sound should be controlled by installing an amount of sound-absorbing material in proportion to the volume of the room.

2. The sound in a room should have sufficient loudness; a condition that was brought about by reflection from the various surfaces of the room which reinforced the direct sound. If the speaker or musical instrument produced only a weak sound, no arrangement of the room would increase the loudness, except by the use of an electric loudspeaker.

3. Speaking should be distinct. For this purpose it was desirable to arrange the reflecting surfaces near the speaker, and to apply absorbing material to selected walls.

TABLE I.—*Absorbing Coefficients of Common Materials.*

| | Coefficient per sq. ft. |
|---|---|
| Open window (absorbs all sound falling on it) ... ... ... | 1.00 |
| Hair-felt, one inch thick... ... | .55 |
| Plaster walls ... ... ... | .025 to .034 |
| Glass ... ... ... ... | .027 |
| Concrete ... ... ... ... | .015 |
| Varnished Wood ... ... ... | .03 |
| Carpets ... ... ... ... | .15 to .25 |
| Audience (per person, about 15ft of clothing) ... ... ... | 4.7 |
| Wood seat ... ... ... ... | .2 |

Inspection of this table, said the speaker, showed why a room lined with plaster, glass, and wood was reverberant—the surfaces absorbed but little and the sound would persist several seconds before becoming inaudible.

An all-important question arose as to the amount of sound-absorbing material that should be installed for good effect, and this had been answered by obtaining the opinions of auditors regarding auditoriums already possessing good acoustics. Before discussing the answer to this question it should be stated that the reverberation depended also on the loudness of the sound and on the volume of the room; larger rooms, with the reflecting walls further apart, would have a longer reverberation. Those factors might be put into the statement : the time of reverberation $t$ was directly proportional to the loudness of the sound and to the volume $V$ of the room, and inversely proportional to the absorbing material $a$ present. Putting this in the simplified equation we got : $t = .05\ V/a$, where the factor .05 represented a standard loudness.

As a simple example the lecturer took an actual room 148 ft. long, 57 ft. wide, and 23 ft. average height; the volume being approximately 194,000 cu. ft. The absorption $a$ in the room was calculated from the coefficients in Table I. as follows :—

| | Units. |
|---|---|
| Wood floor, 8,436 sq. ft. at .03... ... | 253 |
| Plaster ceiling, 8,436 sq. ft. at .033 ... | 278 |
| Plaster on tile walls, 9,430 sq. ft. at .025 ... ... ... ... ... | 236 |
| 1,000 seats at .15 ... ... ... ... | 150 |
| Absorption for the empty room ... | 917 |
| Average audience (330 people) at (4/.7-.15)* ... ... ... ... ... | 1,500 |
| Absorption with average audience ... | 2,417 |

* When an auditor occupies a seat its absorption (.15) is subtracted.

It should be noted that the absorption of the audience was nearly twice that of the surfaces in the room. This was due to the clothing worn. Continuing with the calculations, we found the time of reverberation for the empty room to be :—

$$t \text{ (empty room)} = .05 \times 194{,}000/917 = 10.6 \text{ seconds,}$$

and for the average audience,

$$t \text{ (average audience)} = .05 \times 194{,}000/2{,}417 = 4.02 \text{ seconds.}$$

That was, a standard sound would persist 10.6 seconds in the empty room and 4.02 seconds with an average audience present. Comparing these results with those for auditoriums having good acoustics, it was found that the times were too long and that the room would be too reverberant so that sound-absorbing material must be introduced to make the reverberation less. For guidance in such installation, the following table of optimum values of the time of reverberation and absorbing material had been prepared :—

TABLE II.—*Optimum Time of Reverberation and Optimum Absorption.*

| Volume of Room. Cu. ft. | Optimum Time. Seconds. | Optimum Absorption. Units. |
|---|---|---|
| 3,300 ... | 1.0 ... | 165 |
| 12,900 ... | 1.1 ... | 585 |
| 33,000 ... | 1.2 ... | 1,380 |
| 63,000 ... | 1.3 ... | 2,400 |
| 117,500 ... | 1.4 ... | 4,200 |
| 186,000 ... | 1.5 ... | 6,200 |
| 276,000 ... | 1.6 ... | 8,600 |
| 407,000 ... | 1.7 ... | 12,000 |
| 550,000 ... | 1.8 ... | 15,300 |
| 750,000 ... | 1.9 ... | 19,700 |
| 1,000,000 ... | 2.0 ... | 24,800 |

Inspection of the table revealed one important fact—that the optimum time was short, not exceeding two seconds for an auditorium of 1,000,000 cu. ft. Defective auditoriums usually had too long a time of reverberation.

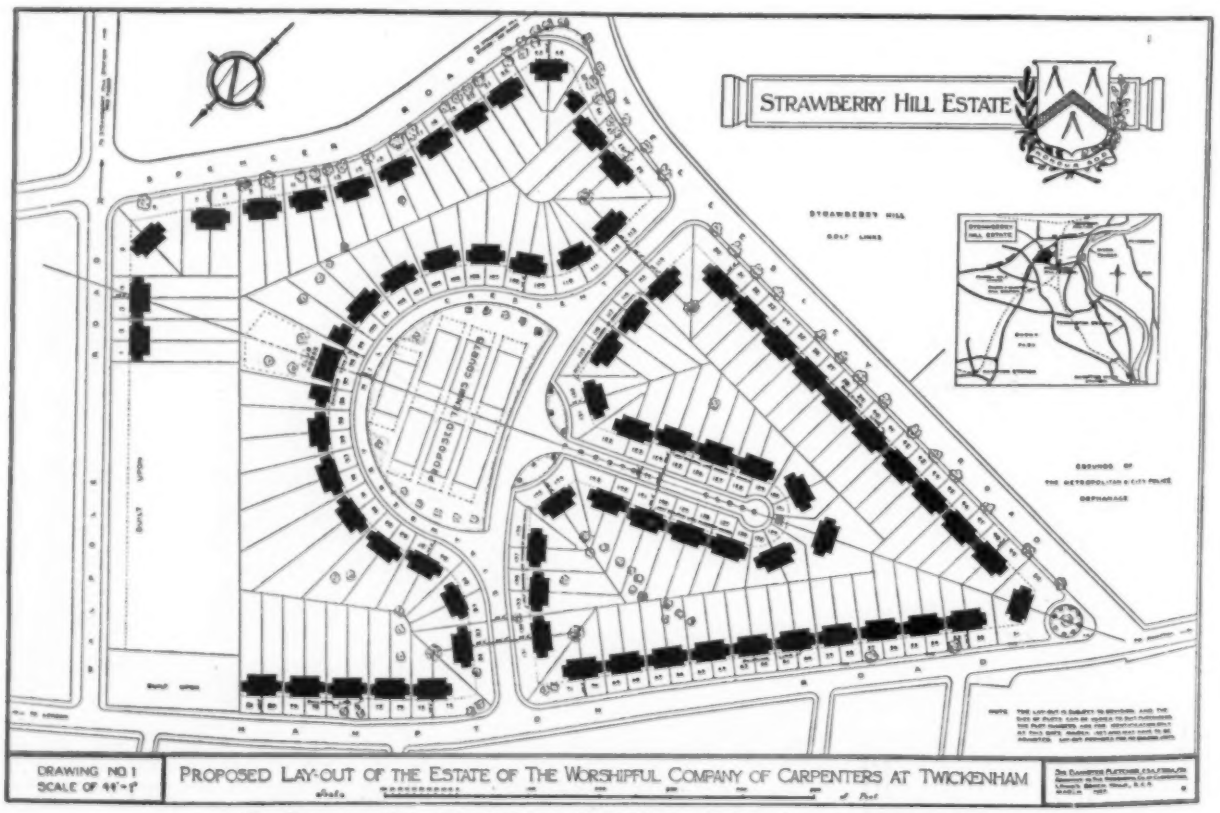
If they applied these optima to the case of the room first described, the volume was 194,000 cu. ft., which would require an optimum time of about 1.51 seconds, and this would be obtained when approximately 6,420 units of material were in the room. Suppose optimum acoustics were wanted for a two-thirds capacity audience. The room already had 917 absorbing units for the empty room, to which should be added 3,000 units for a two-thirds audience, giving a total of 3,917 units. To this must be added 2,500 units to give the optimum of 6,420 units. If hairfelt was selected as the sound-absorbing material, the 2,500 units would require 5,550 sq. ft. (5,550 at .55 = 2,500 units), which might be applied in panels on the ceiling. Summing up, the times of reverberation for the corrected room would be :—

$t$ (empty corrected room) $.05 \times 194{,}000/3{,}420 = 2.82$ seconds.

$t$ (with one-third audience) $.05 \times 194{,}000/4{,}920 = 1.97$ seconds.

$t$ (with two-thirds audience) $.05 \times 194{,}000/6{,}420 = 1.51$ seconds.

$t$ (capacity audience) $.05 \times 194{,}000/7{,}920 = 1.23$ seconds.


STRAWBERRY HILL ESTATE
DRAWING NO 1
SCALE OF 44'=1"
PROPOSED LAY-OUT OF THE ESTATE OF THE WORSHIPFUL COMPANY OF CARPENTERS AT TWICKENHAM

SIR BANISTER FLETCHER, F.S.A., F.R.I.B.A., Architect. (*See page* 856).

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# ILLUSTRATIONS

### St. Mary Abbots Court, Kensington.

This block of flats has been erected at Warwick Gardens from the designs of Mr. C. H. Roberts, A.R.I.B.A., and Messrs. Joseph. The accommodation provided may be studied from the plans reproduced upon one of our supplementary plates. The general contractors were Messrs. Gaze, of Kingston, and the following were sub-contractors:—Messrs. F. H. Wheeler, electric installation; Messrs. J. H. Nicholson and Co., Ltd., heating and hot water; Messrs. Waygood-Otis, Ltd., lifts; Messrs. Stuarts Granolithic Co., artificial stonework; Messrs. Norris, iron staircase; Messrs. Crittalls, metal windows.

### St. Peter's, Lowick.

The church of St. Peter, Lowick, is one of those which form the well-known Nene Valley group, lying between Northampton and Peterborough. The west tower, which is the subject of these drawings, is later in date than the body of the church, and, with the exception of the famous Boston "stump," is the finest example we possess of the octagonal lantern on a square base. Unlike the neighbouring example at Wilby, this lantern was not intended to carry a spire. The tower is built of the local oolite, and is somewhat unmasonlike in construction, cornice mouldings and battlements being scribed over one another in a curiously hasty manner. A local tradition says that there was rivalry between Lowick and Tichmarsh as to which village should have the finer tower, and that when the master-mason of Tichmarsh saw this lantern he went away and hanged himself.

The drawings which we reproduce are by Mr. Donald McMorran, and gained the Pugin Studentship.

### Royal National Orthopaedic Hospital.

The extensions to this hospital consist of a large new out-patients' department approached from a new main entrance in Bolsover-street. From this entrance a wide, well-lit corridor leads direct to the new waiting-hall—a large well-proportioned hall some 75 ft. long and 32 ft. wide. It is flooded with light and its main feature is the decoration. Usually these halls lack interest, but in this case the patients' attention is at once taken up with the series of decorated panels, each bay representing a month of the year. They are the work of Miss Nan West and are an attractive feature of the buildings.

Off the waiting-hall are the consulting and dressing-rooms, also an operating theatre for minor operations, with sterilising, anæsthetising, plaster and recovery rooms *en suite*. Leading from the hall is a corridor, which gives access to rooms in which patients are measured for and fitted with surgical boots, instruments, etc. The exit is from the further end of the hall and leads into Euston Road, so that cross-traffic within the hospital is eliminated. A second corridor from this hall leads to the electrical department. In this case the old out-patients' department has been remodelled and adapted for physio-therapeutic treatment and contains rooms for all the most modern forms of electric massage and light treatment, the old hall itself being used for gymnasium purposes.

The old electrical department has also been reconstructed and now contains a large room for X-Ray work with dark-room adjoining, as well as accommodation for medical officers, waiting-room and private treatment. The basement under the new out-patients' department is taken up with large workshops for instrument makers. These are well lit and ventilated and contain all the most modern machinery for instrument work.

The front portion of the buildings facing Bolsover-street has a first and second floor. The first floor comprising bedrooms, etc., for medical officers, also a large lecture and reading-room, while the second floor consists of bedrooms and lavatory accommodation for nurses. A further feature of the buildings is the provision of panel heating, by which wall and ceiling surfaces are warmed, enabling pipes and radiators to be eliminated, thereby leaving fewer places for dust and dirt to collect.

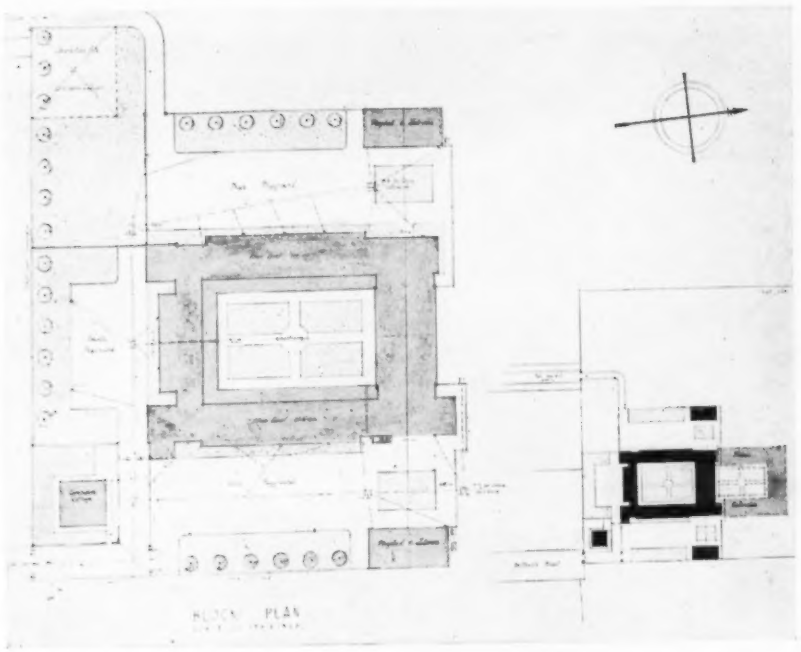
The architects for the new buildings are Messrs. H. F. Murrell and R. M. Pigott, FF.R.I.B.A., and the builders, Messrs. Holloway Bros. (London), Ltd.

Following is a list of the sub-contractors—Duncan Watson and Co., lighting; Rosser and Russell, Ltd., heating; Crittall Manufacturing Co., metal casements; Mellowes and Co., Ltd., lantern lights, etc.; Carter and Co., Poole, terrazzo tiling; J. P. White and Co., special doors; Adams, ironmongery; Benjamin Clemens, sculptor; Kleine Patent Fire-Resisting Flooring Syndicate, Ltd., fire-resisting floors; Limmer and Trinidad Lake Asphalt Co., Ltd., asphalt; North British Rubber Co., Ltd., rubber flooring.

### Strawberry Hill Estate, Twickenham.

The Strawberry Hill Estate at Twickenham, belonging to the Worshipful Company of Carpenters, is being developed as a good-class residential district in accordance with the lay-out plan prepared by and under the supervision of Sir Banister Fletcher, F.S.A., F.R.I.B.A., F.S.I. The estate, on which many fine old trees exist, has a good open situation, occupying practically an island site and overlooking the Strawberry Hill golf course.

Plots for some 150 houses are shown on the lay-out plan, giving an average of 8 to the acre, and the land has been spaced out to allow for the erection of a garage to each house, if required. The perspective which we illustrate gives a general view of the estate, showing its axial planning and crescent-shaped central feature, which is being set aside for tennis-courts, and the provision of blocks of good-class flats at the corners of the cross road



**Public Elementary School Competition, Guildford: First Premiated Design.**
MR. GEORGE P. STAINSBY, A.R.I.B.A., Architect.

### Elementary School Competition, Guildford.

Extracts from the assessor's report on this competition are given on page 869. The successful architect is Mr. George P. Stainsby, A.R.I.B.A., of Stockton-on-Tees.

### "Electric House," Battersea.

We illustrate this week the "Electric House," which has been erected by the Battersea Borough Council. A description of the work is given on page 864. Mr. T. W. A. Hayward, M.Inst.C.E., is the Borough Surveyor, and Mr. Henry Hyams, F.R.I.B.A., the architect.

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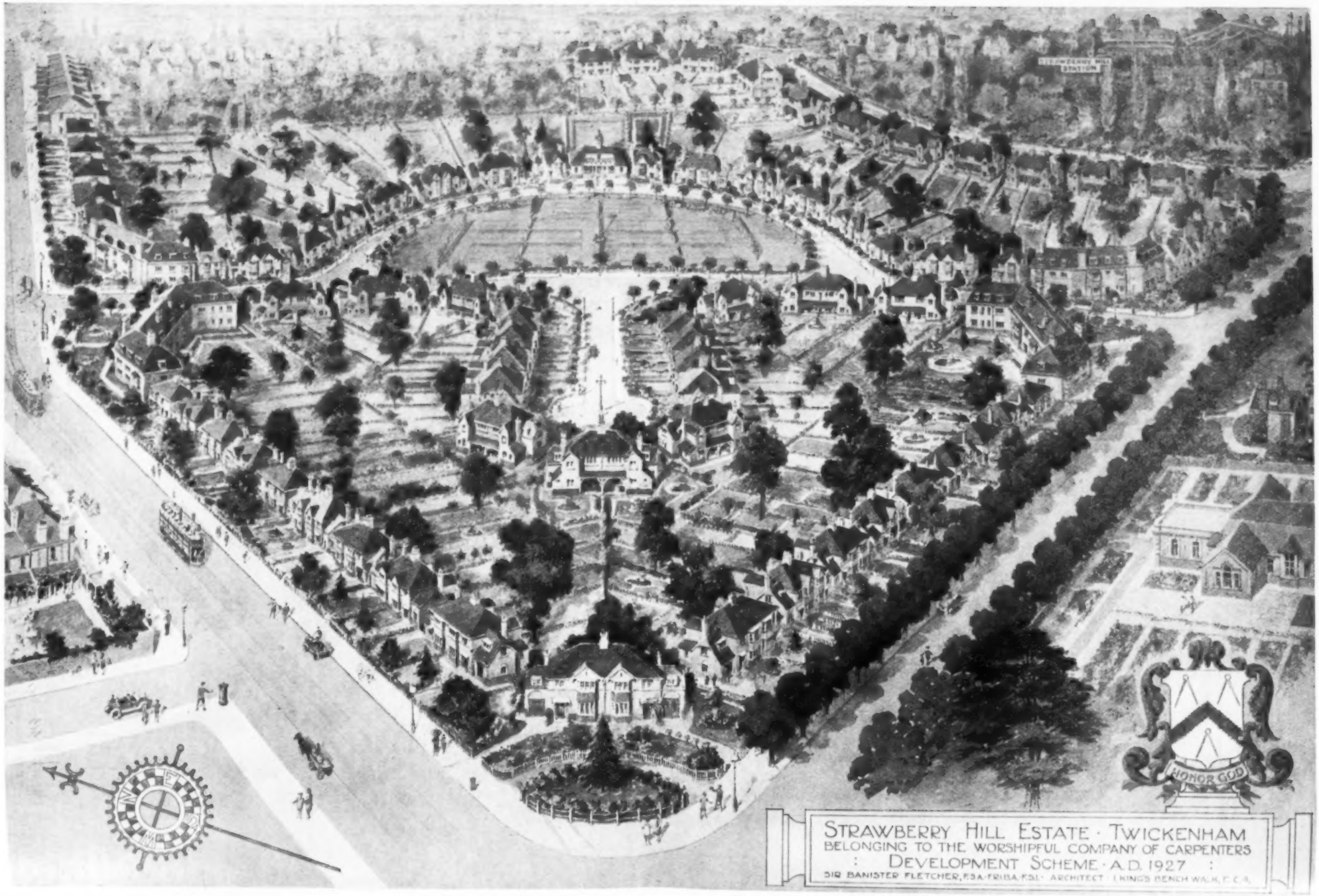
### Historical Monuments in France.

Sir Banister Fletcher, F.S.A., F.R.I.B.A., lecturing on Wednesday of last week at the Central School of Arts and Crafts, on the subject of Romanesque architecture in France, preceding the great cathedral-building or Gothic epoch, described how Romanesque architecture, indirectly derived from Roman, evolved a series of different constructive expedients in different parts of the country, and eventually produced the Gothic style, at first reluctantly in the south, but with more grace in the north. There were few buildings in France at that time, except those left by the Romans, and these naturally determined the main character of French building during the period when the style was called Romanesque.

These ancient churches showed the intertwined histories of English and French kings when much of France belonged to England, and there were many architectural changes. France, said the lecturer, had not the marble of Italy, but good building stone, and had great vivacity and inventiveness. The great dividing line between peoples and styles was the Loire, and vaults and domes in the south against the usurping arches and concentrated thrusts of the north showed how the latter style, from its distance from Roman influence, grew more progressive in spirit, and led up to the building genius of the "Ile de France."


STRAWBERRY HILL ESTATE · TWICKENHAM
BELONGING TO THE WORSHIPFUL COMPANY OF CARPENTERS
: DEVELOPMENT SCHEME · A.D. 1927 :
SIR BANISTER FLETCHER, F.S.A. F.R.I.B.A. F.S.I. · ARCHITECT · 1 KINGS BENCH WALK, E.C.4.
HONOR GOD

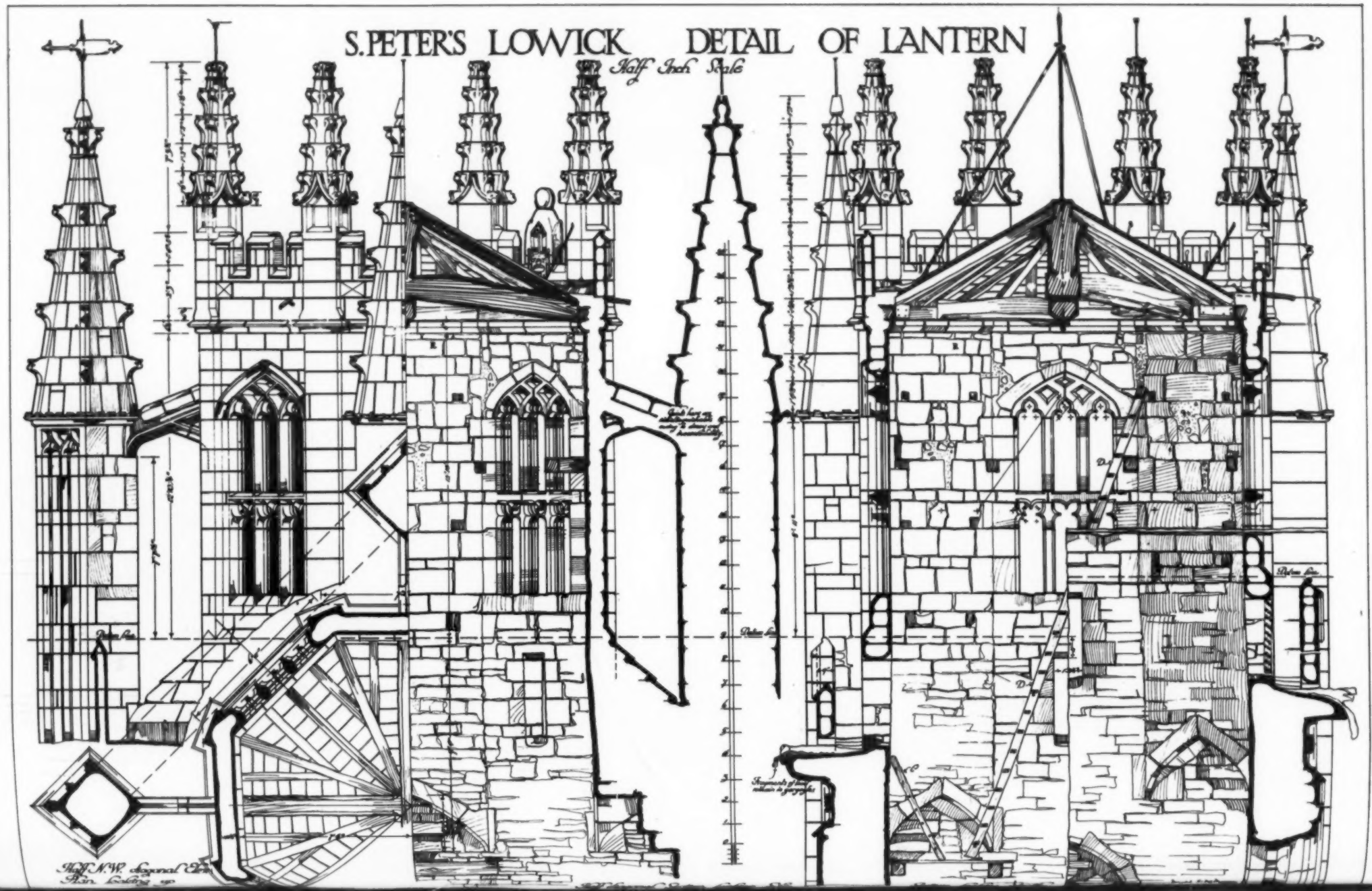
SIR BANISTER FLETCHER, F.S.A., F.R.I.B.A., Architect.

27.

SIR BANISTER FLETCHER, F.S.A., F.R.I.B.A., Architect.

# S.PETER'S LOWICK DETAIL OF LANTERN

*Half Inch Scale*



# WEST TOWER OF S. PETER'S LOWICK

*in the County of Northampton*

South Elevation

East Elevation

West Elevation

Section - looking East

North Elevation

Block Plan

Ground Floor

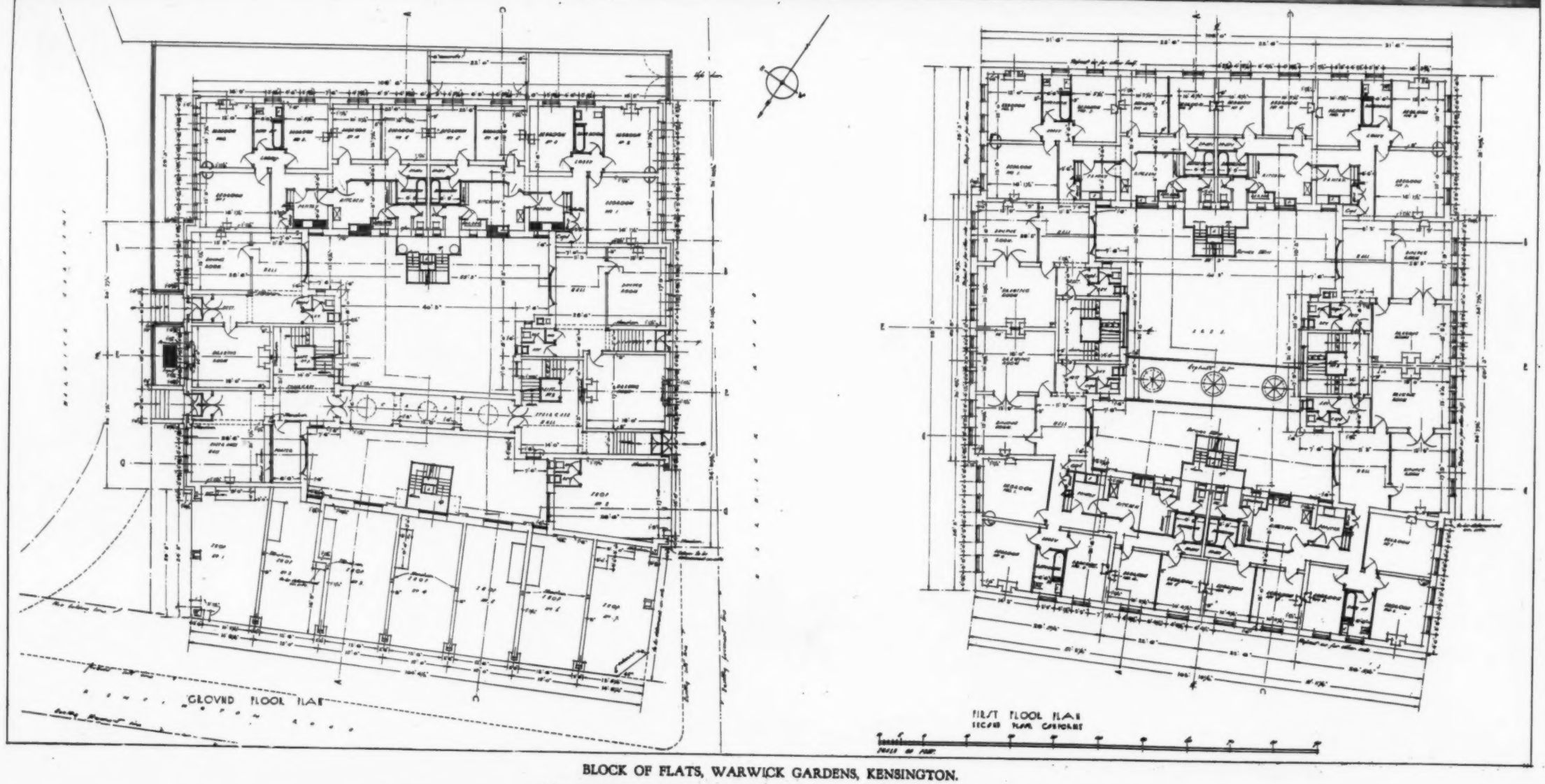
Ringing Chamber

Belfry

Lantern

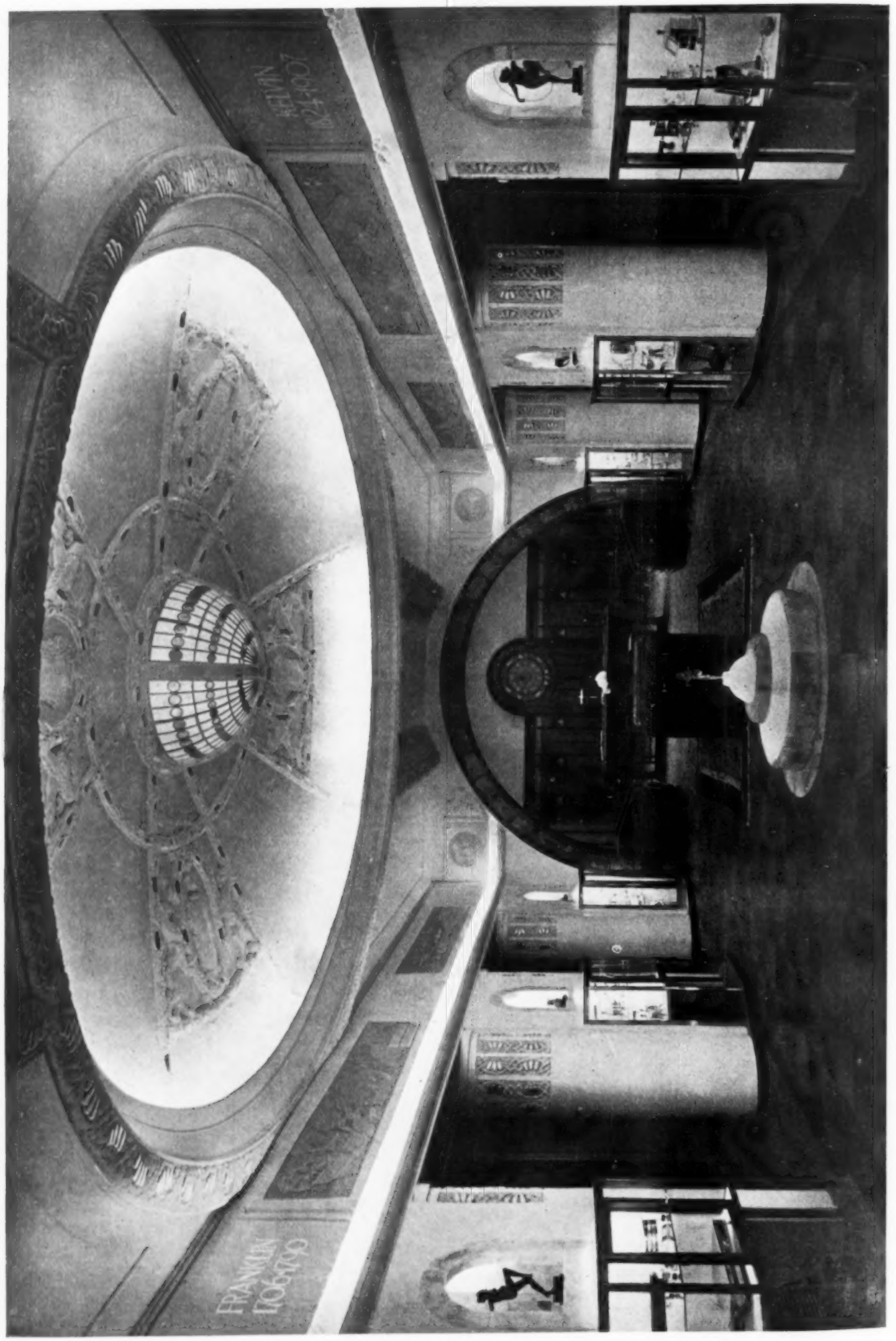
PUGIN STUDENTSHIP DRAWINGS

By Mr. Donald H. McMorran.




BLOCK OF FLATS, WARWICK GARDENS, KENSINGTON.

Mr. C. H. Roberts, A.R.I.B.A., & Messrs. Joseph, Architects.



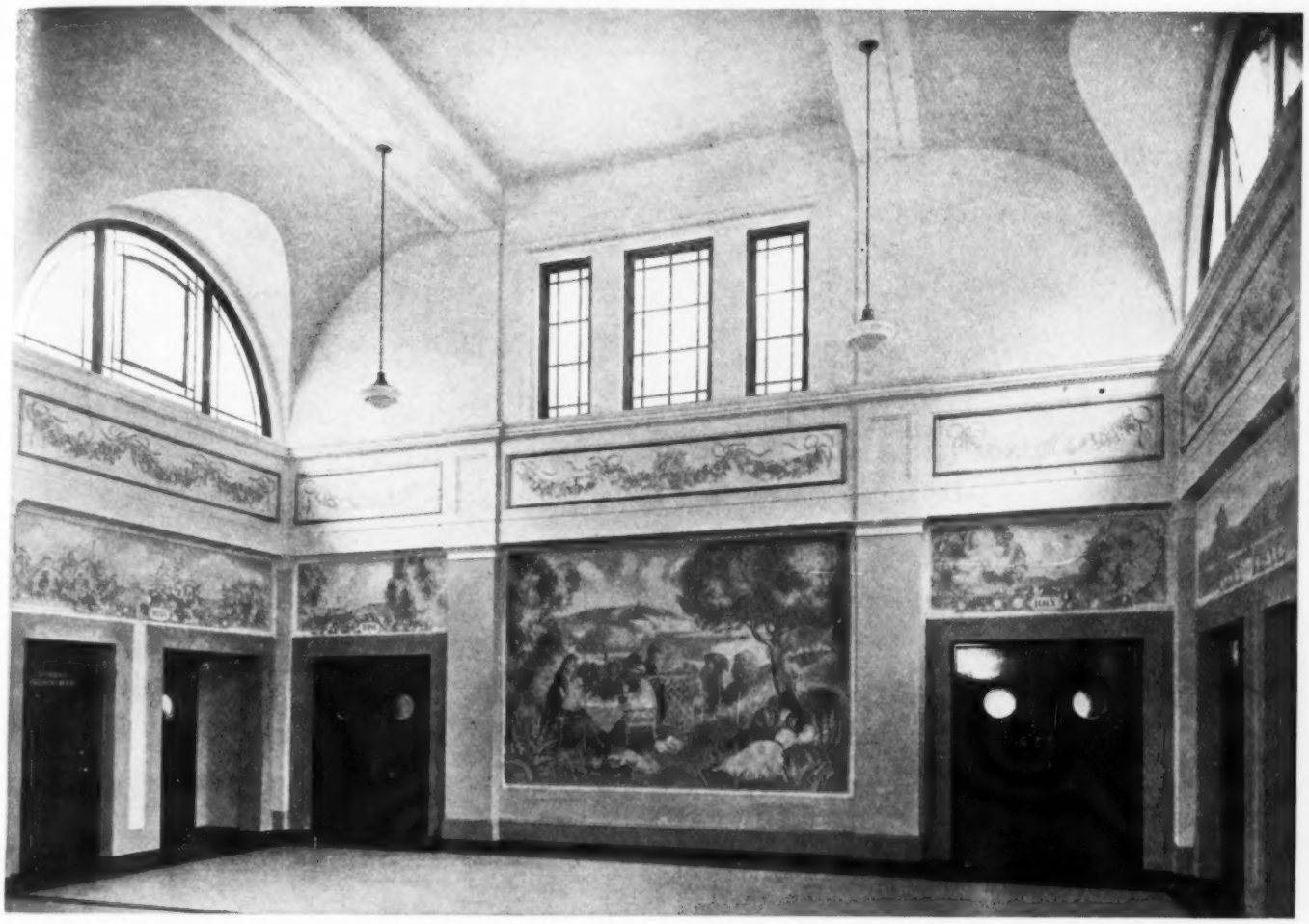
**Electric House, Battersea: Central Hall.**
**Mr. Henry Hyams, F.R.I.B.A., Architect.**

Mr. Henry Hyams, F.R.I.B.A., Architect.

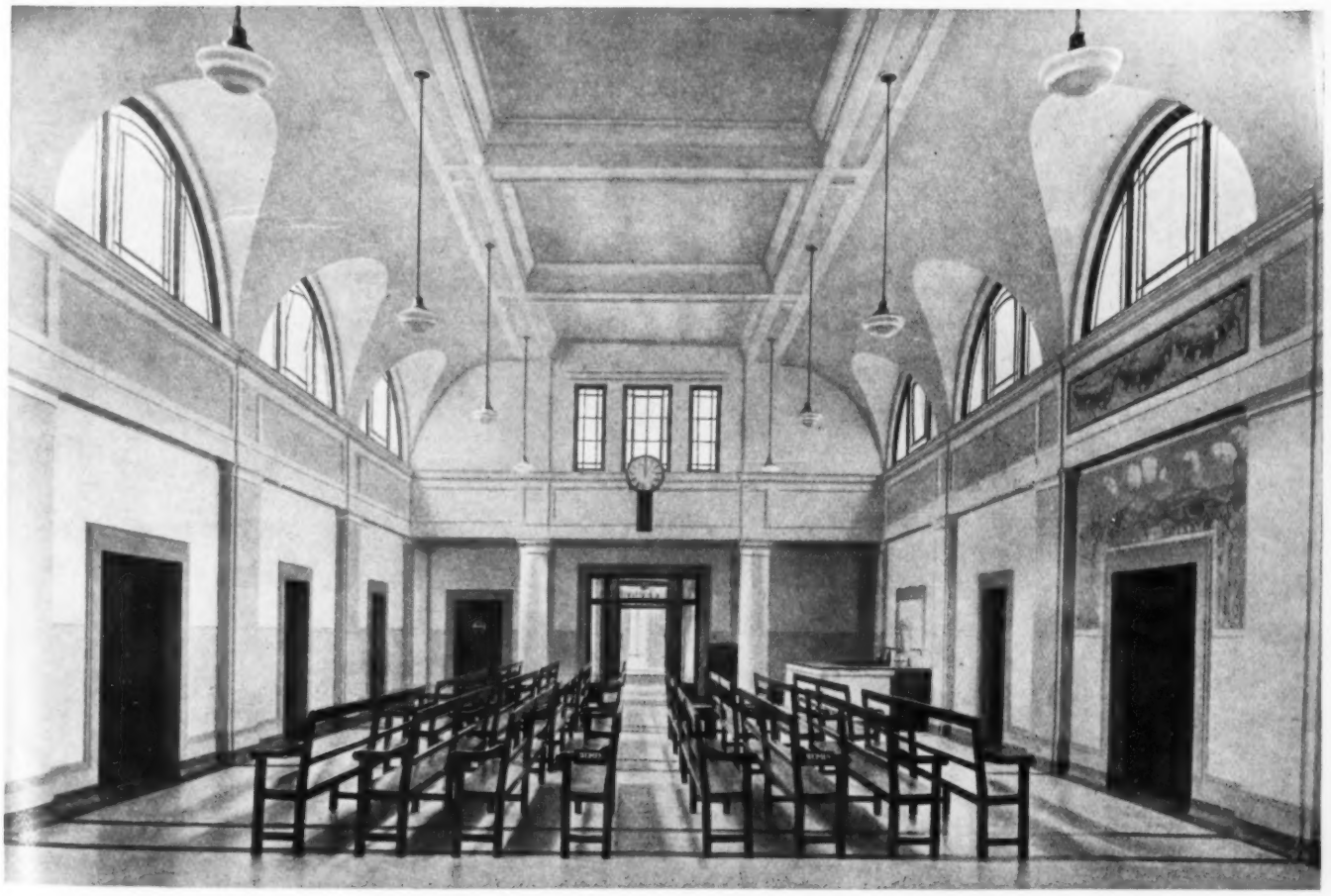
**Extension of the Royal National Orthopædic Hospital, Bolsover Street, W.: New Waiting Hall.**

Messrs. H. F. Murrell and R. M. Pigott, FF.R.I.B.A., Architects.

UNIV. OF MICH.



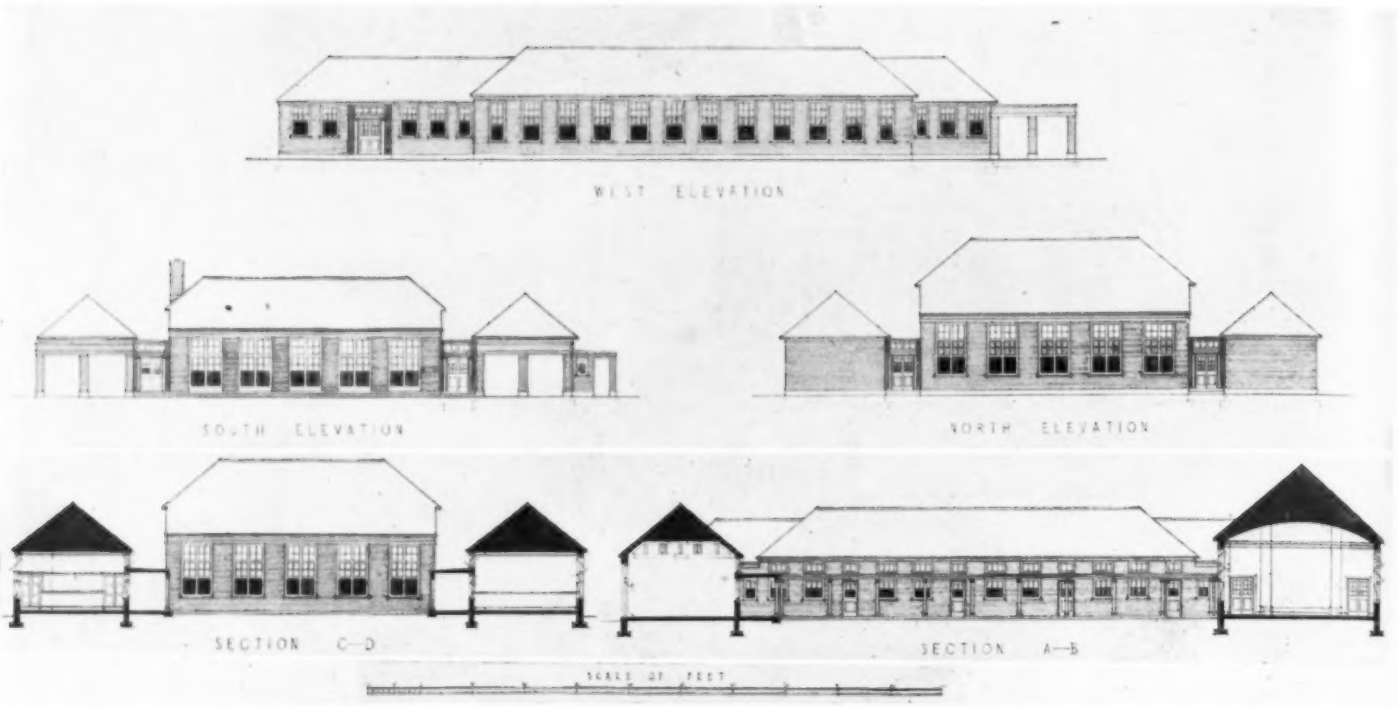
VIEW SHOWING DECORATIVE PANELS BY MISS NAN WEST.

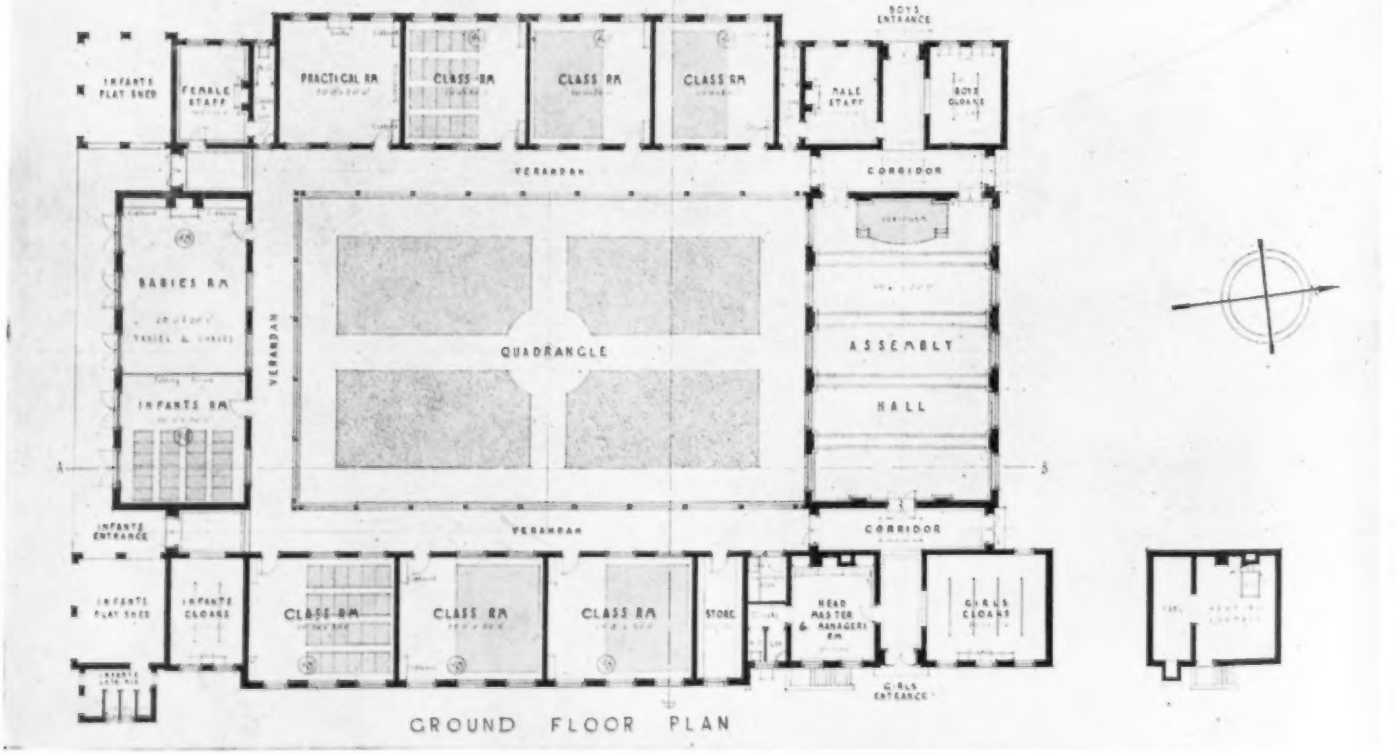


NEW WAITING HALL, LOOKING TOWARDS ENTRANCE.

**Extension of the Royal National Orthopædic Hospital, Bolsover Street, W.**

MESSRS. H. F. MURRELL and R. M. PIGOTT, FF.R.I.B.A., Architects.






**Public Elementary School Competition, Guildford: First Premiated Design.**

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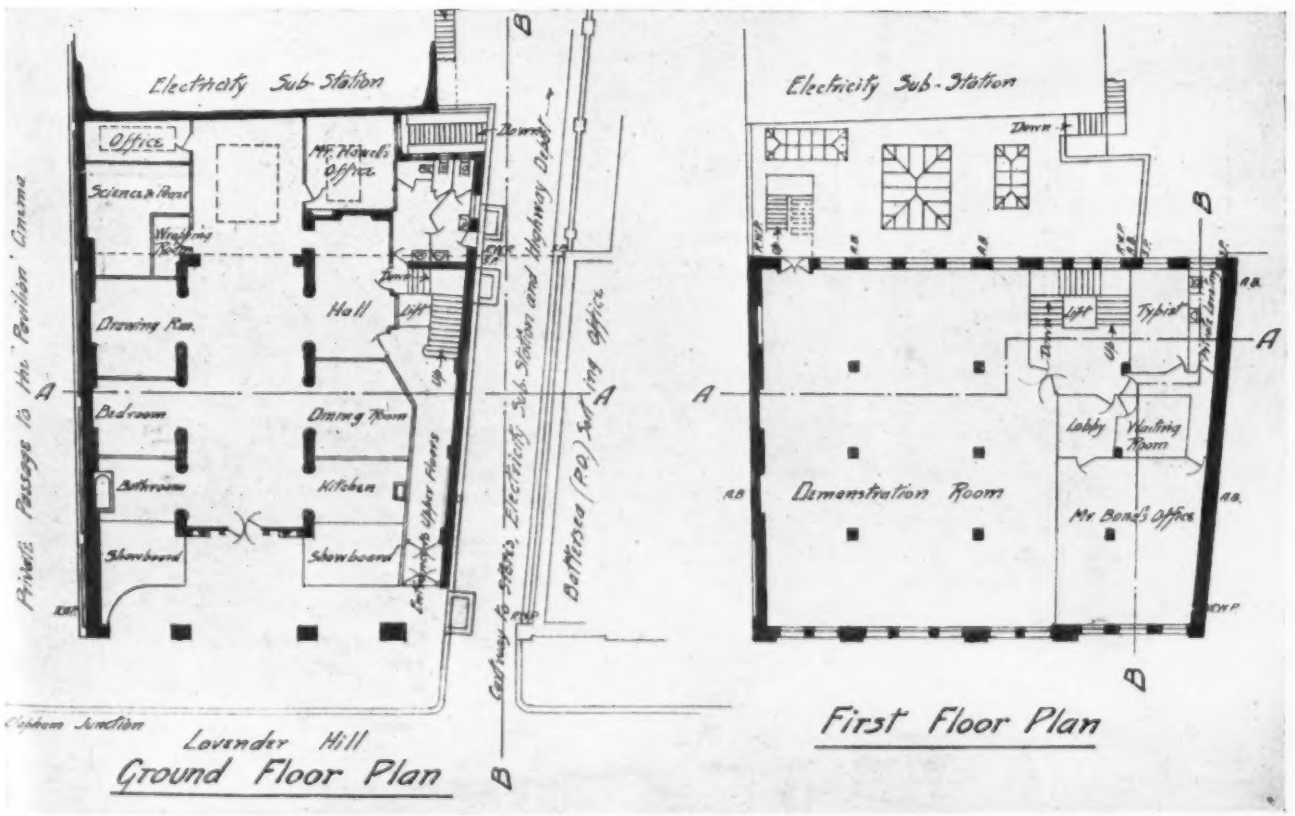



**Electric House, Battersea.**

MR. T. W. A. HAYWARD, M.Inst.C.E., Borough Surveyor, in association with MR. HENRY HYAMS, F.R.I.B.A., Architect.

ENTRANCE DOORWAY.

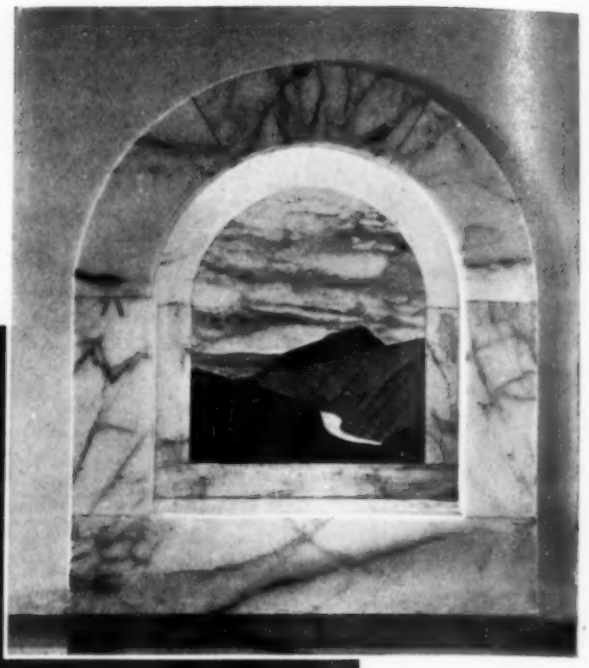
**Electric House, Battersea :** DETAIL OF BOROUGH ARMS IN MARBLE.

MR. HENRY HYAMS, F.R.I.B.A., Architect.

**Electric House, Battersea : Views in Central Hall.**

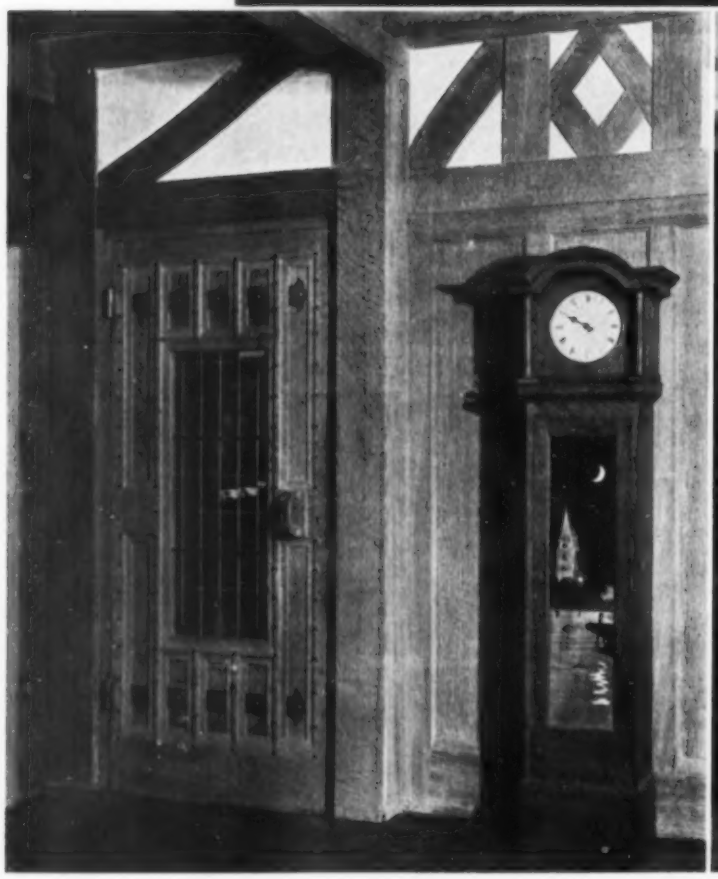
MR. HENRY HYAMS, F.R.I.B.A., Architect.

Marble Niches, Electrically Lighted from Top.



Fountain in Pale Sienna Marble and Opalescent Stained-Glass Bowl, with Concealed Electric Lighting.

Bronze Figure by M. P. le Faguays.

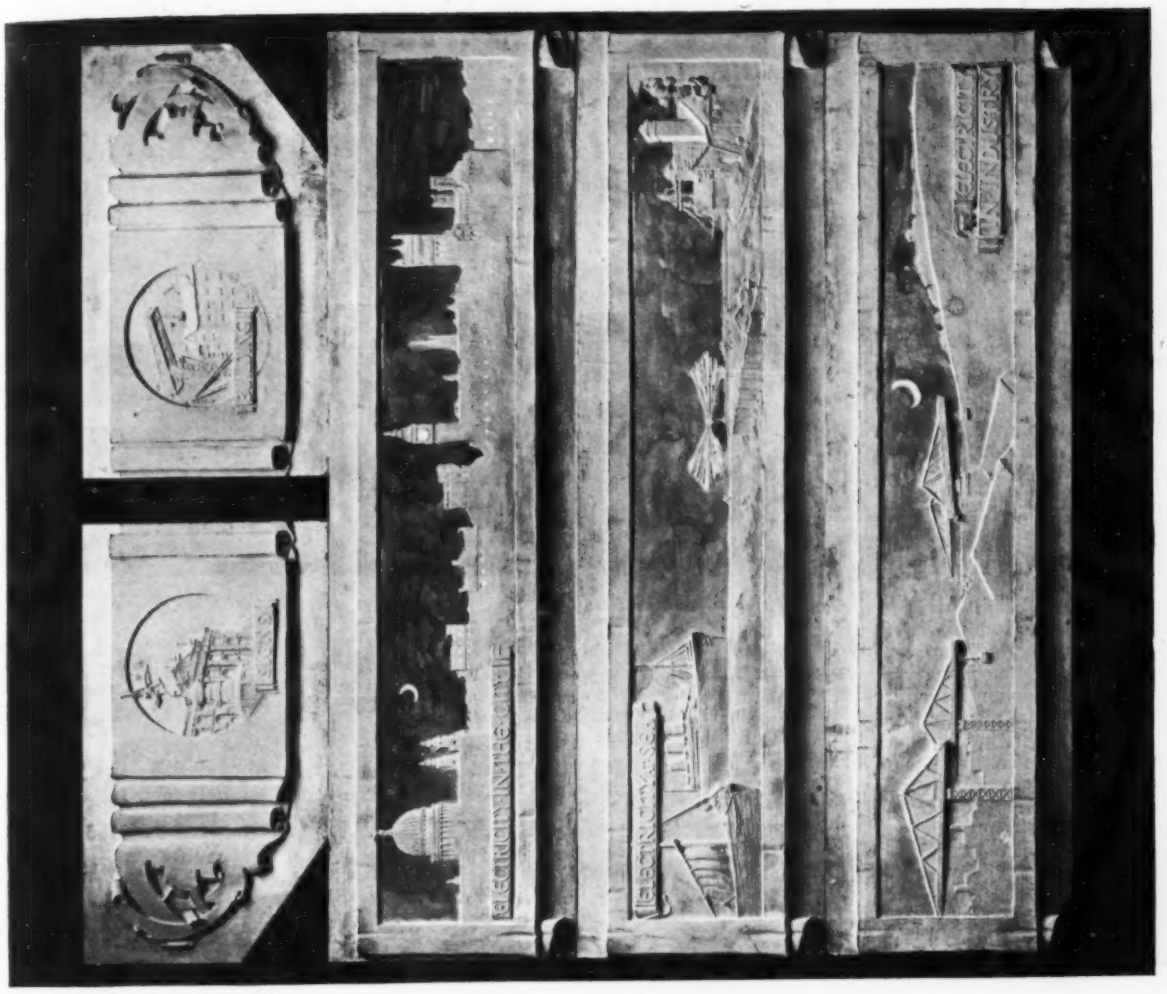


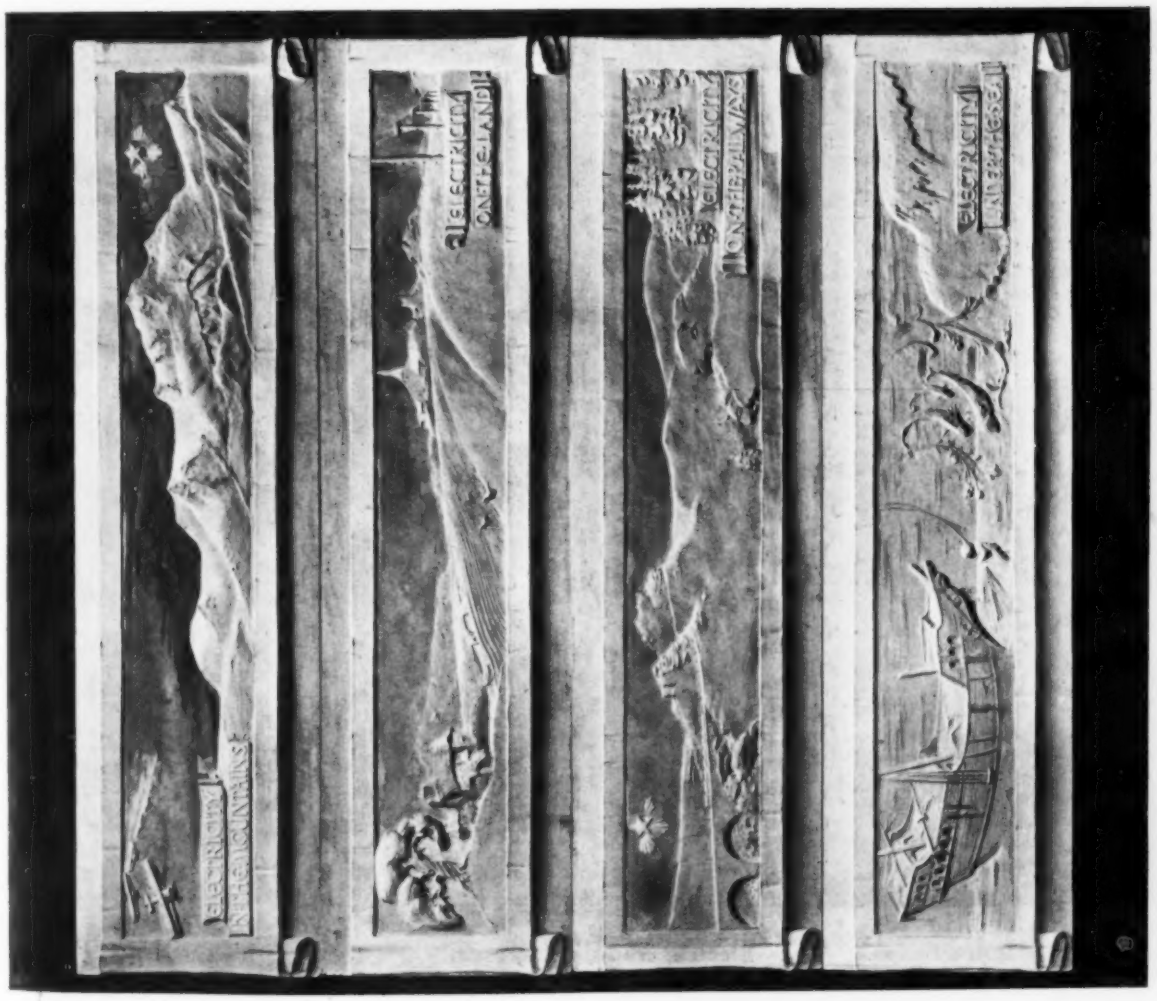
Oak Hall Door and Master Clock.

Bronze Show Case.

**Electric House, Battersea.**

Mr. Henry Hyams, F.R.I.B.A., Architect.





Electric House, Battersea : Fibrous Plaster Friezes.

MR. HENRY HYAMS, F.R.I.B.A., Architect.

# BATTERSEA COUNCIL'S "ELECTRIC HOUSE"

The "Electric House," which we illustrate this week, has been erected in Lavender Hill for the Battersea Borough Council, and was opened on October 29. It is the associated work of the Borough Surveyor, Mr. T. W. A. Hayward, M.Inst.C.E., and the architect, Mr. Henry Hyams, F.R.I.B.A. The interior, with its decoration, has been designed and carried out under the direction of Mr. Hyams, who, it is evident, has put a great deal of thought into a work which is full of interest. The electrical installations and equipment were designed by Mr. F. Bond, the Borough Electrical Engineer.

Electric House has an area of about 4,000 sq. ft. and a frontage of nearly 65 ft. next to the Post Office in Lavender Hill. About 13 ft. of this frontage is given to a cartway to an electricity sub-station and to a depôt to be used for highway purposes.

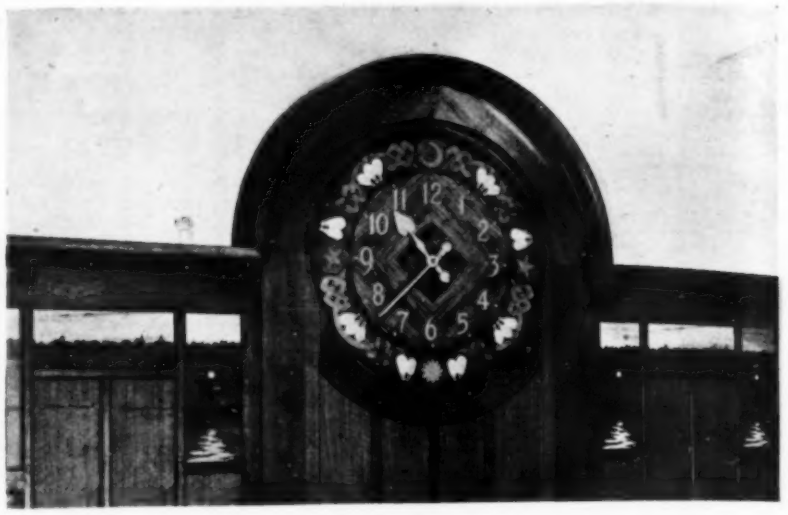
Including the basement, the building has six stories. The carcase is of brick, the floor and roof construction of steel. Faced with Portland stone and roofed with Westmoreland slates, the elevation rises to a height of 54 ft. Electric flood lights are provided at the eaves for illuminating the front of the building, and on the first-floor level an electric clock is fixed, with dials showing up and down Lavender Hill. Above the fascia are more electric flood lights, and electrically lit stone window boxes for flowering plants. The fascia itself is of Devon marble, with aluminium letters and borough arms lit with concealed electric lamps. Additional lighting is provided in the soffits of the arches below. From the pavement an entrance under these arches gives an open space in front of the shop windows paved with squares of light and dark green marble. Greek Cippolino marble columns flank the bronze entrance doors, above which is a carved San Stefano marble panel of the borough arms and symbols of electricity. The caps of the columns are also carved with symbols of electricity.

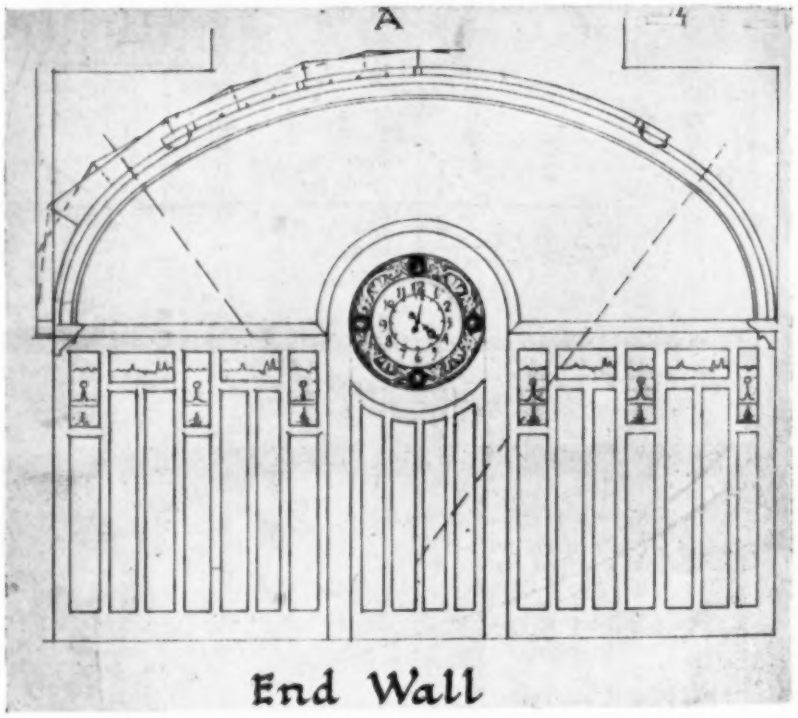
The basement consists of showrooms, stores, repair shop, unpacking room, storekeeper's office, and switch room.

The ground floor is planned with a large central hall and three typical dwelling-house rooms on either side, a lighting demonstration room, two offices, and two shop windows.

The first floor has a large demonstration and lecture hall and the borough electrical engineer's office with waiting room and typist's room adjoining.

The second, third, and part of the fourth floor are for the provision of offices, and a small flat is built on the remainder of the fourth floor.






Detail of Clock.

Detail of Frieze.

Ceiling Decoration.

**Electric House, Battersea.**

Mr. Henry Hyams, F.R.I.B.A., Architect.

The central hall has a floor of cork tiles, in the centre of which is a marble fountain, lit with concealed electric lamps and opalescent stained-glass bowl. On the walls, above bronze showcases, are niches lit by electricity and built of marble partly inlaid with onyx stones to landscape motives. The back part of this hall is panelled in walnut, with inlay wood decorative panels, and an inlay wood electric clock. The ceiling is an elliptical dome in fibrous plaster, and the frieze below this is decorated in most attractive fashion with panels in blue and gold, showing in conventional rendering the use of electricity in the city, on the land, under the sea, and so on. A columned opening leads into an oak hall, which gives an entrance to the lift.

In this oak hall there is a stone fireplace with an electric fire of burning logs, an electric clock of the grandfather type, the master clock of the building, having an inlay-wood panel of St. Mary's Church, Battersea. At the oak fireside seat are shown interesting electric light fittings, adaptable for standards or brackets.

From the oak hall one enters the dining room. An attractive window here shows the use of electricity in heating a part of the room which is usually the coldest.

The kitchen is found next, with walls tiled with blue vitreous tiles made in Battersea. Hot water, electrically heated, is laid on to the sink, and other fittings to be found here are an electrical washing machine and an electric refrigerator.

On the other side of the central hall is the drawing-room, the treatment of which shows what can be done with cornice lighting and window heating. The marble back to the electric fire is of inlay marble. In the bedroom is shown an electric fire under the window and various other uses of electricity. The bathroom has the walls panelled with cork tiles, and is fitted with an electric geyser for the bath and lavatory basin, and electrically heated mirror and towel rail. The lighting demonstration room has various exhibits. The ventilation and heating of the basement is by means of electricity. Filtered and warmed air is delivered through ducts to the various rooms and stores. The entrances for the floors are from either the street or the oak hall, a lift being provided to serve all stories.

Following is a list of the sub-contractors :—Frazzi, floor and roof construction; T. Jenkins (Torquay), marble entrance; Arts Pavements, outside marble paving; Burke and Co., inlay marble niches; J. Daymond and Son, marble fountain; Morris Westminster Guild, stained glass decorations; Gilbert Seale and Sons, fibrous plasters, fixed and coloured by the Council's works department.

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**Lectures on Architecture for Building Trade Workers.**

The Council of the R.I.B.A. are holding a series of five informal illustrated lectures on architecture confined to workers in the building trades. The following is the programme :—

Wednesday, December 14, at 8 p.m., "Hampton Court Palace," by Mr. Ernest Law, C.B.

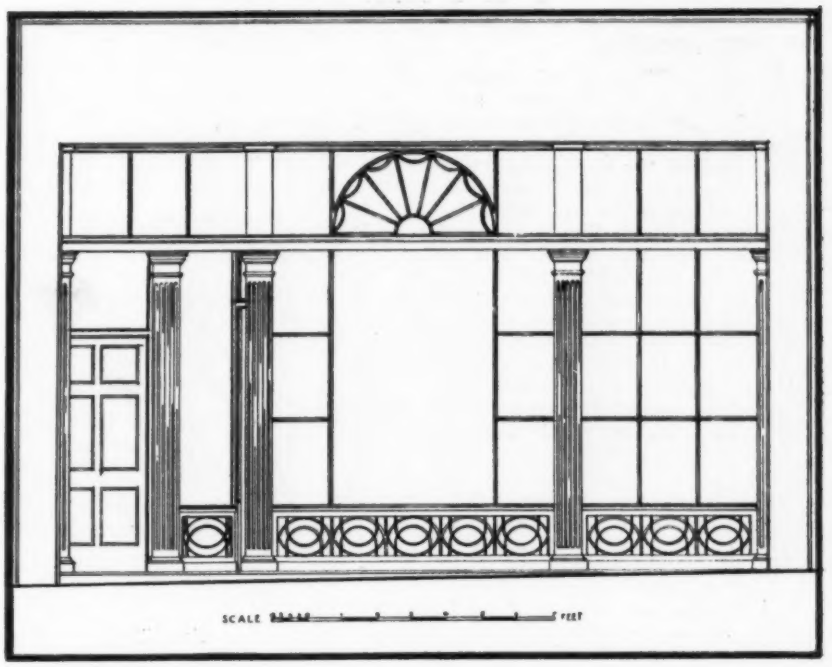
Wednesday, January 18, 1928, at 8 p.m., "Architecture of Provincial France," by Mr. Henry M. Fletcher, M.A., F.R.I.B.A.

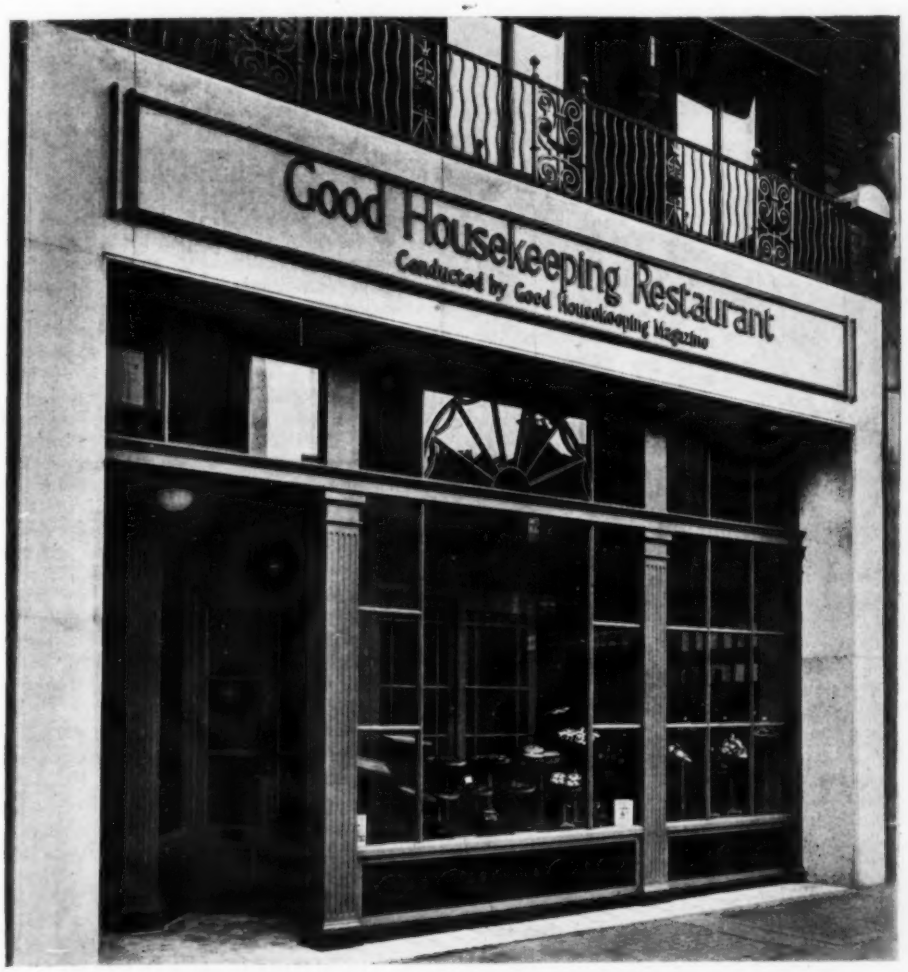
Wednesday, February 1, at 8 p.m., "House Building through the Centuries," by Mr. C. H. B. Quennell, F.R.I.B.A.

Wednesday, February 15, at 8 p.m., "Bridges," by Sir E. Owen Williams, K.B.E.

Wednesday, March 7, at 8 p.m., "General Building Materials," by Mr. J. H. Jarman (Superintendent, H.M. Office of Works).

All men employed in the work of building are cordially invited, admission being free. Buffet refreshments will be served at 7.30 p.m. before the lectures.




*This charming front by Messrs. Fitt and Prior-Hale, L.R.I.B.A., is in mahogany, with window backs and showcase of the same material, the whole being finished in green enamel. The letters on the fascia are in green enamelled bronze metal. The restaurant is in Oxford Street.*

**A Page from the November-December "Shopfront" Number of *Architecture*.** (*See page* 847).

# PARTHENON STUDIES.—X.

By W. R. LETHABY.

## THE METOPES.

The original metopes at the British Museum are from the south flank of the temple, and, as is well known, these represent the battle of the Lapiths, assisted by Theseus, the Athenian hero, against the Centaurs. From the fact that these are so well known, we are likely to get an impression that the sculptured panels were all of this type, and further, that they were more or less what we call "decorative." The subjects, however, were different on the several fronts, and all were important in the story-telling function of the building. On the east front, under the Birth of Athena in the pediment, was represented the Battle of the Gods and Giants, by which the world was made fit for human habitation On the south side, as just said, was the fight with the Centaurs, in which Theseus took a leading part. On the north side of the temple was represented the final scenes of the Trojan War, where the Greeks obtained the victory by favour of Athena. The west front metopes contained sculptures of other battle scenes, which are generally said to have been the war of Greeks and Amazons, but were more probably, I think, the victory of the Greeks over the Persians.

Together with the great sculptured groups in the pediments, the metopes represented the special relations of the goddess with her city from primitive days in a sort of stone book of Genesis, or history of Athenian culture—"The Victory of Hellenism over Bar

FIG. 1.

barism, Hellas against the brutish world." All was wrought to the glory of Athena. It is usual to speak of the metopes rather slightingly, and this is all the more easy, as at the Museum they are skied as if it were the Royal Academy. Haydon, however, who had really seen them, spoke of "That divine form in a metope grappling a Centaur by the throat, heaving up his chest and drawing in his breath, preparing to annihilate his enemy (Fig. 1); or the one in all the relaxation of death under the legs of the Centaur who prances in triumph; or the other, who dashes back his opponent as if lightning flashed through his frame."

It is often stated that these panels are in a more archaic style than the rest of the sculptures, but this is not evident to all observers. It has even been argued that they may have been prepared for an earlier building. Probably many of the metopes were the earliest of the sculptures to be finished, but it is only an assumption that the whole series was ready for building in as the work went on. Real building operations are not often so regular as that, and it is not impossible that all were carved in position. That those of the two ends were carved and fixed before the great sculptures of the pediments were hoisted into position is difficult to believe. I cannot discern any real archaism in the metopes. The workmanship is advanced, several figures are undercut almost to separation from the ground, and some of the limbs strike boldly outwards. One of the women lifted from the ground dangles helpless feet from under the edge of her skirt in a very realistic way. The drapery of another woman flies back over the knee of a Centaur, which shows through it (Fig. 2).

FIG. 2.

Several of these Centaur groups show a grim sort of humour, the combatants grasp one another's hair, one Lapith is tripped backwards over a wine jar, and a fragment shows a Centaur's hoof trampling on his opponent's toes. Two or three have the combatants with legs interlocked in wrestling attitudes, and these suggest swift movement in a masterly manner. The composition of most of them is wonderfully balanced, whilst the figures fill the ground like very skilful heraldic charges. Collignon says that one or two have "a certain dryness," and this is the uttermost that may be allowed. They are marvels of design and craftsmanship, and it is absurd that more than a dozen of these great sculptures which we possess should be put away where they cannot be examined—some day they must be re-discovered and really exhibited. Lord Elgin, more than a century ago, had recommended that only casts should be placed in situations out of reach, and this is obviously the only policy that can be maintained.

Although the relief is so high, the block form of the original stone in which the groups were sculptured was retained as much as possible by keeping many of the high points in the plane of the original surface of the blocks. This method is suggested in Fig. 3, which, however, has no claim to accuracy. Fig. 4 indicates in a similar way the disposition of the sculpture on the ground.

Although the character of the Centaur subjects, representing barbaric conflict, has suggested archaism; many less known, such as the Apollo metope of the east front, the

FIG. 3.

Aphrodite of the north, and others, were very beautiful indeed.

I find myself in agreement with what Lechat has said: "Perhaps no one has ever rendered exact justice to the metopes. These little living scenes, alternating with the rigid triglyphs, had an architectural office, but they were also noble sculptures, and the beauty of their composition equalled their beautiful workmanship."

The metopes are broken and cold, but when fresh they were polished, brilliant in colour, and glittering with attached bronze accessories, as many drilled holes show. In metope 3 of the Centaur series, the Lapith has "a hole between the collar bones and another on the lowest left rib, showing where a sword belt has been attached. Two holes are on the body of the Centaur: these may have served for the attachment of a bronze weapon." The Lapith in metope 4 had a metal wreath (*British Museum Guide*, 1908). The wheels of most of the chariots represented appear to have been of bronze. A big hole appears on the photograph of metope 10 east, where such a wheel must have been fixed. In front of the charioteer in 14 east is a hole where a long bronze driving rod was probably pinned to the background. Dalton's excellent view of part of the south side of the temple, drawn in 1749, shows seven of the metopes (26-32) in place, and they are so well drawn that losses since that time may be understood. No. 27 has lost man's right leg, and 28 Centaur's right arm; 29 was whole except for woman's head; 30 was as now; 31 has lost man's left arm, which fell straight; 32 man's left arm and leg existed. Some drawings by Pars and Lord Elgin's artists at the Museum are also valuable records.

Among Haydon's drawings of the marbles in the Print Room at the Museum, made about 1808, are some from the metopes. (One at least of the drawings from casts of the Centaur groups at the Theseum preserves details where the cast is now defective.) There are also some unpublished drawings by the accurate artist who drew the sculptures for *Museum Marbles*. The publication

FIG. 4.

of a selection of these old drawings would be a valuable aid to study.

*East Front.*—The fourteen metopes representing the Battle of the Gods and Giants, or great powers of evil, came first in the cycle of sculptured stories. In 1908 I brought out the value of a restored drawing of these metopes made by Feodor, Lord Elgin's artist. He evidently studied them closely from a scaffold when they were in a much better condition than now. "The Elgin drawing [I wrote] is clearly very accurate in some points which can be tested. These eastern metopes cannot be profitably discussed until every trace of what actually remains can be brought into comparison with these restorations made more than a century ago." Material for this comparison may now be found in *Sculptures of the Parthenon*, 1910, where Feodor's restorations are shown in association with photographs of the sculptures in their present state. These restorations are thus seen to explain in several cases what would otherwise be obscure or irrecoverable. Lists of former attempts at identifying the subjects are also set out and discussed. Of these it seems to be rightly observed that the attempt of Carl Robert (1884) was the most convincing. As is pointed out, however, he certainly interchanged two metopes, one containing Apollo and the other Herakles. Having the drawings of Feodor to compare with the vestiges, these two panels are now

the most easy to interpret of the whole. On the other hand, I have no doubt that Robert was right in explaining the two central metopes as representing the chariot of Athena and her contest with a giant. In regard to the latter, Feodor had made the mistake of reading very slight traces as those of a male figure, but other considerations are sufficient to show that Athena indeed occupied the central place on the front of her own temple. In the earlier structure her contest with the giant was in the middle of the pediment.

The supposition on which Robert proceeded was that the several gods probably appeared in much the same order as on the E. frieze. Amending his scheme in regard to Apollo and Herakles as explained, I would assign the several panels thus:—

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hermes and giant. | Dionysos. | Ares. | Hera. | Chariot of Zeus. | Zeus. | Chariot of Athena. | Athena. | Apollo. | Chariot of Apollo. | Herakles. | Artemis. | Poseidon. | Chariot (Poseidon's). |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 |

Four of these may be identified with assurance: 2 Dionysos and his panther attacking a giant; 9 Apollo pursuing an enemy; 11 Herakles between two other figures; 14 Poseidon's chariot rising from the sea.

Metope 7 contained a chariot with winged horses, and metope 8 a tall figure, shield on arm, advancing irresistibly against a cowering enemy. These two are the pair of panels over the middle intercolumniation. Collignon pointed out that Athena's chariot as sculptured on the Treasury at Delphi, had winged horses, and that it was probable on general grounds that the goddess would be here in the centre of her own temple, directly below her great figure in the pediment. He also recalled the fact that Athena repelling a giant occupied the centre of the pediment in the older Athena temple on the Acropolis. Yet he noted dissent from the view and left the question more or less open. The comparison with the sculptures of the Treasury at Delphi is particularly interesting as there are so many other correspondences between them and those of the Parthenon that it may not be doubted that the sculptor of the latter had studied the Delphi work. Among the points of resemblance may be mentioned the design of the seated assembly of gods, the character of relief sculpture with undercut parts, and the attachments of bronze for a chariot wheel, and other details.

There were four waiting chariots filling as many panels on the east front of the Parthenon. Three seem to have been for Zeus, Apollo, and Poseidon, and it is most probable that the fourth in metope 7 would be for Athena. She, as well as Zeus, had a waiting chariot in the sculptures of the great Pergamon Altar. It would follow that the goddess occupied the next panel 8. Lord Elgin's draughtsman, however, interpreted the figure in metope 8, which on this hypothesis should be that of the goddess, as male, and this view is accepted in *Sculptures of the Parthenon*. Yet Athena was a famous giant queller, and this was her own temple.

FIG. 6.

The traces of the body of the principal figure on the existing metope 8 are very slight, and Feodor's restoration of it is obviously incorrect in important points which can still be seen on photographs; it must have been much decayed when his drawing was made. From the evident slenderness of the figure, the energy of the attack, and the way the shield is carried, the remnants themselves (apart from Feodor's interpretation) suggest Athena rather than any other. In Fig 5 I give my own impression of the

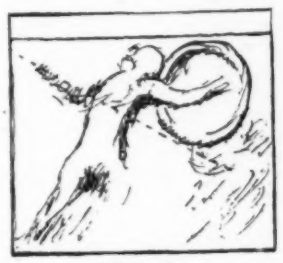


FIG. 5.

decayed panel, indicating what may be read into the traces with a little imagination. The general attitude, outstretched arm, and the shield are quite certain. This shield and the whole attitude are typical of Athena (compare illustrations in Miss Harrison's *Athens*, pp. 442-3, and Reinach's *Vases II*, pp. 21, 41, 102, 204). Pars, in his drawing of the E. front, seems to suggest that the figure had a female skirt.

Further evidence for the identification is furnished by two metopes found at Selinus by Angell and Harris—one archaic and the other of mature style—which represent Athena's victory over a giant. There is a cast of the former in the British Museum, and an illustration of the later one may be found in Bell's *Hellenic Architecture* (p. 90). In both these the legs of the figure tell strongly through the drapery, and one may see how the thought that it was a male might easily arise. This metope must have been very like the group of Athena and the giant in the pediment of the old temple, and this subject was also embroidered on the peplos of the cult statue.

The photograph of the chariot and winged horses in metope 7 given in *Sculptures of the Parthenon* shows that this panel was of the highest beauty, mature style, and most delicate craftsmanship, an altogether lovely work. The horses seem eager with eternal freshness. It may be regarded as proved that this was Athena's chariot and that her victory over an evil power was represented in the next panel. Restored drawings of these might be made with fair confidence. (For chariots with winged horses see Reinach's *Vases II*, pp. 46, 309.)

Metope 9 represented the victory of Apollo over a power of darkness. His opponent had a beast's skin over his left arm, and the subject was restored by Feodor as Herakles struggling with Apollo for the Tripod. There are no traces of a tripod, however, and the opponent of Apollo was really Tityos, as is made certain by several vase paintings (Reinach's *Vases II*, pp. 244, 245, 249, 269), in some of which the beast's skin appears. Enough remains on the metope itself to show that Apollo's figure was of great beauty. Unfortunately, only a very small print of an excellent photograph of it is given in *Sculptures of the Parthenon;* if the negative still exists, a much enlarged version of it would be very valuable. I give in Fig. 6 a sketch made by comparing the little photograph with Feodor's drawing, which agrees very accurately with existing facts. The god sprang—indeed burst—forward, his nude body relieved against a voluminous mantle, which is falling off, and his hair streamed out behind. The polished bare body must actually have shone against the mantle arranged like a cloud, and doubtless of dark colour. It is evident that Apollo was here identified with the sun. "That the identity of Apollo with the sun was felt in the Periclean account is clear from the poets, especially from a fragment of Euripides." (Davidson, *The Parthenon Frieze*, 1882, p. 97.) The correspondence between the Parthenon panel and Euripides is so close that it looks as if the poet followed the vision of Pheidias.

"Out from the portico gleamed a god,
Apollon: for the bow was in his hand,
The quiver at his shoulder, all his shape
One dreadful beauty . . .
Apollo of the golden hair."

There is nothing of "dryness" or archaism in this radiant figure bursting from the clouds and thrusting darkness away. Watts might have imagined the subject in much the same way. Enough of this wonderful panel remains to allow, when compared with vase paintings, of a restoration being made which would give us back knowledge of a noble Pheidian type and a composition of extraordinary beauty. (Compare a nude Apollo with long hair, Reinach's *Vases II*, 269.)

Metope 11, with Herakles between two lesser figures, has a parallel in one of the archaic metopes from Selinus, of which a cast is in the Museum. The figures with whom Herakles grapples are the Cercropes, "two brothers who practised every kind of knavery."

The metope 4, which balances 11, like it contained three figures; the chief one in this case was female, most probably Hera. Metope 12, a goddess pursuing a giant, is probably, as most generally agreed, Artemis. Dionysos of metope 2 had a panther by his side who sprang at the foe; similar groups are found on the vases, and a fairly secure restoration of it might be made The chariot of metope 14 rose from the sea and had fish playing about the wheels as Homer tells of Poseidon's chariot. There is nothing of dryness in this poetic work, but rather the emergence of a "landscape element." The wheel of the chariot was of bronze, as the hole for attaching it shows the driver held a long bronze rod. Chariots in several other metopes must also have had bronze wheels.

These eastern metopes could be safely represented on a small scale, while half a dozen could be restored at a larger size. Such a method would give back general knowledge of the series in such a way that we might forget the ruin and decay and regain what would be commonly understandable.

*South Side.*—These metopes were mainly of the Centaur battle, but a set at the centre related to other early Greek stories. The distribution appears to have been thus:—12 : 8 : 12; that is, 1 to 12 : 13 to 20 : 21 to 32. In the Museum *Guide* for 1903 it was held that the arrangement was rather 12 : 9 : 11. No. 21, which by this lop-sided arrangement was assigned to the middle group, "represents two women standing by an archaic statue." In the study I made of the facts in *Greek Buildings*, 1908, I pointed out that a similar subject to 21 is represented as part of the Centaur battle on the frieze from Bassae in the Museum: "Two women who have taken sanctuary at a sacred image are attacked by a Centaur. . . . The panel 21 at the Parthenon must belong to the Centaur series. It furnishes, in fact, the episode around which the action develops . . . we may suppose that the central series had a background of a different colour from the rest." I also pointed out the evidence of a painted vase of the subject which showed two women taking refuge in a shrine—"thus was the story brought into relation with the goddess." The arrangement 12 : 9 : 11 is still maintained in *The Sculptures of the Parthenon*, 1910. "The nine central metopes" are considered as forming one group, and we are told that "the Centaur series is resumed" with 22.

It is only loose talk to speak of "nine central metopes"; the one-sidedness of the arrangement 12 : 9 : 11 is apparent enough, but in fact it would have been worse seen in relation to the columniations of the temple. Considered in this way we get 6 : 4½ : 5½, an altogether impossible arrangement.

The details of these metopes are very well and fully described in the volume just named. They have since been studied by Studniczka (*Neue Jahrbücher*, 1912), who greatly helps in elucidating their subjects, and by Schrader, who has brought forward a theory of rearrangement which I do not think very impressive. The subjects were events in primitive Greek story parallel to stories in the Book of Genesis. Pausanias, telling how Triptolemus was the first to sow corn, adds: "The Athenians were first in ancient descent and possession of gifts bestowed by the gods."

In the illustrations of *Sculptures of the Parthenon*, several minor fragments are shown restored as parts of these panels. The fitting of them into the drawings of 1674 prove how accurate these records are. I will here only briefly comment on what is shown and said.

13. *Woman and Man.*—In the description the latter is supposed to be a female, but the bony forms, exposed feet and style of drapery proclaim it to be male.

14. *Youth and Maiden.*—These, with the two in 13, are supposed to be the three daughters of Cecrops with their brother, but this cannot have been so if, as said above, the second figure in 13 is a man. The maiden held a casket and she probably did represent a daughter of Cecrops, while the youth was her brother.

15. *Chariot Group.*—The wheel was probably of bronze as in some other cases The first yoking of horses?

16. *Two Males.*—One, a youth, is prostrate, apparently after a struggle.

17. *Man and Lyre-player.*—The latter in long robes is sometimes described as a woman. Two fragments are restored to this figure. Another piece of drapery from knee to foot is assigned to panel 18, but it belonged rather to 17. The foot is big and exposed, and the lyre-player must have been a male clad in the fashion of the lyre-playing Apollo. Lyre-players on the frieze are males in similar dress, as was pointed out by Murray. The invention of Music?

18. *Two Women.*—With them is an image. I suggest that these may be the two other daughters of Cecrops excluded before. Compare Fig. 65 in Miss Harrison's *Themis*, where the two sisters appear very like the two figures on this metope. See also Fig. 64 in the same volume, where an image of Athena is shown.

FIG. 7.

19. *Two Women.*—These dignified, finely clothed figures must have been especially beautiful. The second one is draped in a fashion like the priestess of the E. frieze, and one of the figures of the Eleusis relief (Fig. 7).

20. *Two Women.*—The first of these held a folded cloth very like the peplos of the E. frieze. It is clear from the old drawings and the few fragments which exist of this series that these panels were of great beauty and of fully matured style. The women were lovely figures, entirely free of "dryness" or archaism. The Centaur series is resumed in metope 21.

Metope 29, near the right-hand end, is an especially fine group of a Centaur carrying off a woman. "The drapery of the Ionic chiton is finely wrought." This panel is very similar to one of the Centaur groups in the pediment at Olympia. In metopes 30 and 31 the Centaurs are triumphant. In 32, the last, the man has the advantage, and he seems to have had a special character. "Carrey, Pars, and Feodor indicate he wore a helmet," and probably he held a sword (Fig. 8). I would see in this upstanding warrior Theseus or Peirithoos, probably the latter. Metope 2 next the beginning of the whole series has a Centaur which is actually subdued by another of the combatants, probably Theseus (Fig. 1). This is the figure that was described by Haydon as "preparing to annihilate his enemy." That Theseus was recognisably here may not be doubted; the panels were not chance combats with Centaurs, but the struggle at the marriage feast of Peirithoos, as is proved by the presence of the women, the shrine scene, and by the fact that wine-jars are used as weapons. The whole was a Theseus subject, and the hero might not be left out. In the *Handbook* of 1851 it was properly observed by Vaux: "The subject was congenial to the Athenian mind because their great hero Theseus took part in it."

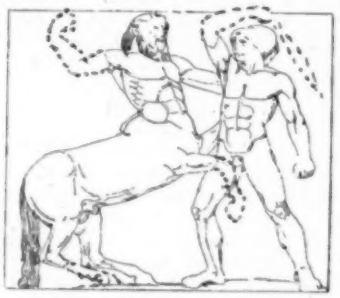


FIG. 8.

*North Side.*—These metopes represented the Trojan war, or rather the fall of the city. It has been suggested that there may have been a group with a different subject in the centre, as was the case on the other flank, but the evidence seems against this. The key to the decipherment was found in metopes 24 and 25, which show Menelaus pursuing Helen, while Aphrodite intervened. Michaelis compared the composition with that of the same subject on an Attic vase in the Vatican, which very closely resembles it except that a fourth figure behind Menelaus is on the vase, a female (Persuasion) rather than a second warrior, as on the metope. The subject occupies two metopes. (At the Theseum also two metopes are devoted to one subject.) The identification of the subjects on this side was long resisted in England.

The figure of Aphrodite in the metope is much ruined, but that the vase represented it accurately is confirmed by the fact, which I noticed several years ago, that the figure of Alkestis on the column at Ephesus repeats the type of figure on the vase very closely. There are several other echoes of the Parthenon sculptures at Ephesus, and it may not be doubted that the lovely figures of Alkestis on the column and Aphrodite on the vase followed a common original, which was the figure of Aphrodite in the metope. Again,

FIG. 9.

FIG. 10.

the same figure reappears in a late relief in the Palace Albani, on which echoes of other Pheidian types may be observed (Fig. 9). This relief is reproduced in Schrader's work on the Parthenon (p. 310).

What remains of the figure of Aphrodite on the metope well agrees with the vase and the lovely figure at Ephesus. From the photograph of this metope it appears that this figure was tall and elegant, having long mantle brought round to the front, with folds radiating towards her right hand, which was held in front of the breast; below the mantle appeared a tunic which fell over feet pointed towards the front (Fig. 10). On the vase the left arm is more lifted than on the metope, but the sculpture, as seen from below, would suggest this to some degree. In the Museum is a fragment from the right shoulder of a draped female figure (342-14), assigned to a metope which looks as if it might have formed part of Aphrodite. It is described as "right shoulder and breast of draped female figure; the chiton fastened down the shoulder with four studs." The type of this figure of Aphrodite may be traced elsewhere than at Ephesus. The Artemis of Gabii echoes the gesture, and in Reinach's *Reliefs* a figure at Athens itself is given (Vol. V, p. 423 (12)), which recalls it (see also II, p. 669 (12)). There is also a funerary statue in the Louvre (Collignon, Fig. 200) which resembles this figure, as does also one of the weepers of the Sidon Sarcophagus (Collignon, Fig 2 (3)). Compare a vase by Hieron in the British Museum (Miss Harrison's *Prolegomena*, p. 556). The same style of drapery, fully adjusted, with the hanging portion over the left shoulder, is used for one of the two noble women's figures on the famous relief from Eleusis, which is generally recognised as a work of Pheidias (Fig. 7). One of the women's figures in the central group of the south side was also draped in the same way.

*(To be concluded next week.)*

## Imported Furniture.

The Standing Committee under the Merchandise Marks Act recommend that imported furniture and cabinet ware made wholly or mainly of wood, whether imported whole or in parts, including upholstered furniture and the frames thereof, and also cabinets and wooden trays of the descriptions customarily sold through the furniture trade, should bear an indication of origin. It is recommended that the Order in Council, which is to include the wholesale trade, should come into force three months after it is made.

# SOCIETIES AND INSTITUTIONS

### Northern Architectural Association.

IN the course of a paper on "Concrete and Reinforced Concrete" read before this Association on November 16, Mr. T. H. Boyce, Assoc.M.Inst.C.E., after giving a good deal of practical information with regard to cements, sand, aggregates, working stresses, etc., turned to the question of the architectural possibilities of reinforced concrete. Considerable attention, he said, was now being devoted to the subject, but at the present time there were comparatively few structures of this type, apart from warehouses, industrial buildings, and purely engineering structures, where the material itself had been confidently and boldly displayed, the tendency having been to confine its use to purely structural members. Skeleton construction of reinforced concrete was common practice, the enclosing walls of brick, stone, or terra-cotta being carried at each floor level, carrying no weight themselves, and functioning only as weatherproof curtains. This followed closely the method of steel frame building with the added advantages of greater protection against fire and corrosion and greater adaptability to the necessary bonding with masonry and brickwork. This type of construction would undoubtedly continue, but it could not be denied that there was a strong and growing feeling amongst architects that reinforced concrete with its exceptional strength, monolithic character and plasticity would result in the evolution of an entirely new type of architecture—necessarily new, in so far as there was no traditional form to follow nor precedent to which the designer could refer if the full advantages of the material were to be utilised. For one with a purely engineering training, to whom structural requirements were of first importance, and who relied upon the exigencies of stress and strain to provide correct lines and satisfying proportions, it was difficult to predict exactly what form the new style of architecture would take. Even if the mental vision of the new style was vouchsafed to such a one, the lack of architectural training would preclude its intelligible translation into words. Hence the speaker contented himself with stressing the necessity for originality and bold conception of design upon those whose vocation it was to present structures which were at once pleasing and demonstrative of the structural element.

Undoubtedly one of the reasons for the reluctance to adopt concrete façades had been its coldness and greyness, two factors which were not to any extent relieved by mouldings, cornices, and other features of design. Most facing materials, however, required to be considered from the point of view of colour and texture, and why not concrete? Was it revolutionary to suggest that concrete might be considered as reconstructed stone, or that the exposure of the stone particles was not violating the æsthetic sense but was essentially a true revelation of a satisfactory building material? By the careful selection of sand and aggregates, both in relation to colour and size, excellent decorative effects could be obtained by brushing the face of the concrete while it was still green with a stiff wire brush and plenty of water, thus removing the surplus cement and laitance and exposing the aggregate. For industrial buildings a sufficiently pleasing effect could be obtained by the use of ordinary aggregate. For the best work, however, it would be necessary to use a specially selected aggregate for the facework, which, when exposed, would harmonise with the colour of the surroundings. The thickness of this special facing might vary from ¾ in. to 2 in., and the maximum size of the aggregate used would be from ¼ in. to ⅜ in., mixed in the proportion of about 3 to 1. If the grading of the special aggregate was satisfactory there was no necessity to add sand. Where the addition of sand was required it must, of course, be chosen with due regard to colour. In some cases it might be necessary to add a pigment to the cement, or alternatively use a coloured cement where it was essential that the cement should be indistinguishable from the aggregate.

The two varieties of concrete, the facing and the backing, were placed simultaneously, the method adopted being to place thin metal sheets the required distance from the outer shutter. The facing mixture and the ordinary mixture were then placed in position on each side of the metal plate and tamped, when the plates were raised, and a little further tamping bonded the separate mixes together. Chantry Bridge, Rotherham, was carried out on this principle, the specification requiring that the surface concrete should be 2 in. thick, wire brushed, and composed of Mount Sorrel chippings and Bessemer sand. The cost of the facing in this case was 10s. per square yard. As an alternative to the metal plate, wire netting sheets with a very small mesh could be placed between the forms. This would keep the separate mixes apart while being placed, but would allow them to bond with other when tamped. The cost of the treatment varied with the type of aggregate used, whether coloured cements were necessary, and the thickness of surfacing required, but it might be taken as being between 6s. and 10s. per square yard. For scrubbed finish only where no special surface concrete was used, the cost might be taken at about 2s. per square yard, a further cost of 1s. per square yard being entailed, if, after brushing, it was required that the surface should be polished with a carborundum stone.

Other types of finishes included :—coloured washes, either by using the coloured cements now marketed or by adding pigments of the required colour to ordinary Portland cement, and actual colouring of the concrete itself by the use of a coloured cement. Both these methods had to be used with care, particularly where the surfaces to be coloured had a large area, as in some colours it was difficult to obtain a uniform tint. Dalemain Bridge, situated in Dalemain Park, on the main road between Penrith and Ullswater Lake, was satisfactorily constructed in coloured concrete of the same colour as the stonework of Dalemain Hall, which stood immediately behind the bridge. The colouring material was mixed with the ordinary cement by the contractor, and the ultimate result was quite satisfactory. Cement rendering was not generally very satisfactory in this country, the rendering after a few years being inclined to peel off unless the work was exceptionally well done under favourable conditions. An easier and more satisfactory finish, provided the shuttering had stripped well, was simply to wash down the concrete with a cloth and very weak cement wash.

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## GUILDFORD ELEMENTARY SCHOOL COMPETITION

THE awards in this competition are given under Competition News (page 848), and we illustrate the winning design by Mr. George P. Stainsby, A.R.I.B.A., in this issue. Thirty-one designs were submitted.

In his report on the competition the assessor (Mr. Henry W. Allardyce) writes as follows :—

"The plan of the school building in the design No. 10, which I have placed first, is of the open verandah, quadrangle type now in general favour. All the various rooms and offices asked for in the conditions are provided and are compactly, economically, and conveniently arranged on the plan. The position of the girls' and boys' entrances in relation to the hall and the head master's and staff rooms is useful for both school and entertainment purposes and for supervision of the playgrounds, and the plan readily lends itself to division into three separate departments and to future extension. It is probable, however, that the Board of Education may require the practical workroom and the three 40 classrooms to be enlarged, the former to 600 ft. and the latter to 480 ft. super. floor area (*i.e.*, the 12 ft. basis). This can be done without altering the general arrangement of the plan or increasing the length of the quadrangle. An addition of £450 to the estimated cost of the school should cover this enlargement.

"The placing of the lavatory basins in the cloakroom is economical and not objected to by the Board of Education, but if it is intended to lock up the cloakrooms during school hours in order to prevent pilfering, doors or gates will, of course, be required, and it will be found very convenient to provide a separate lavatory compartment. This can also be done without altering the general arrangement of the plan, but would, of course, add slightly to the cost.

"The position of the infants' latrines at the corner of the building is very convenient and for babies essential, and for this reason it might be advisable to interchange the babies' room with the infants' classroom. The Board will no doubt require one of the closets to be partitioned off from the others and a small urinal for the boy infants. Personally, I think it objectionable for direct access to be provided from a playshed into a latrine building, although it is sometimes done.

"The elevations are simple, economical and suitable for a school. The long, continuous windows suggested in the alternative elevations would probably be more expensive than the others. The lay-out of the site plan is in accordance with the conditions, but I suggest consideration be given to placing the school block with its main axis running east and west instead of north and south, as this would facilitate further extension without encroaching further on the playing-fields. Further consideration might be given to the division fencing and gardens indicated.

"The drainage system is shown as a single service, instead of the surface water being kept separate from the soil drains: this can, of course, be easily rectified. The boys' latrine is not shown in detail, but, judging by the overall size on the lay-out plan, the urinals will be kept separate from the w.c.'s.

"With reard to the estimate of cost, I consider the author's estimate for this design No. 10 is much too low, as, after cubing up the school buildings, I find his figure of £7,560 works out at only about 10d. per cubic foot, whereas I think it should be 1s. As the other items are also low I give for the purpose of comparison the figures of the author's estimate and my own in parallel columns :-

| | Author's estimate. | Assessor's approximate estimate. |
|---|---|---|
| | £ | £ |
| School building ... | 7,560 | 9,200 |
| Latrines, playshed and drainage ... ... | 750 | 1,250 |
| Caretaker's house ... | 450 | 600 |
| *Boundary fencing ... | 250 | 950 |
| *Tar-paving, including new pathway ... | 200 | 350 |
| *Levelling and preparing playing-field ... | 750 | 750 |
| Architect's charges, etc. ... ... ... | 600 | 1,280 |
| | £10,560 | |
| Quantity surveyor, printing and clerk of works ... ... | 500 | |
| | £11,060 | £14,380 |

"*The items of fencing, tar-paving and levelling and seeding playing-field vary very much in most of the competitors' estimates. In placing this design first I have not overlooked the discrepancies between the author's estimate and my own, but, in my opinion, there is no other design submitted of equal merit apart from cost, and no design of equal merit that could be built at as low a cost as this design could."

# WEEK IN PARLIAMENT

WESTMINSTER, *Wednesday.*

### The Slum Problem.

Sir K. Wood informed Mr. E. Brown that the total sum paid on account by Exchequer subsidy towards the cost of slum clearances since April 1, 1924 was £103,000.

Mr. E. Brown asked whether the Minister of Health could give figures to show the effect, if any, of the building of new houses since January 1, 1919, on reducing overcrowding in the slum areas of our great cities.

Sir K. Wood said that the figures desired were not available, but it was obvious that the large numbers of new houses which had been erected since the Armistice must have contributed very largely to the relief of overcrowding, including overcrowding in slum areas.

Mr. Gillett asked the Minister if he would state the number of persons it was proposed to displace in connection with the slum clearance scheme in the borough of Finsbury, and whether provision would be made for rehousing those so displaced within the borough.

Sir K. Wood said that 205 persons would be displaced in connection with the Metropolitan Borough of Finsbury (White Horse-alley) Reconstruction Scheme, 1926, and rehousing accommodation for this number was being provided by the Borough Council in flats which were in course of erection at Mantell-street within the borough.

Mr. Tasker asked the Minister of Health whether he was aware that the London County Council, acting under the Housing Acts, 1890 to 1919, the County of London (Hickman's Folly Improvements Scheme) Order, 1923, had taken possession of certain properties known as Nos. 16 and 20, Hickman's Folly, Nos. 1 to 6 (inclusive), Hickman's-court, and Nos. 1 to 4 (inclusive), Oliver Twist-court, notwithstanding that the decision of the arbitrator as to the amount of compensation payable by the Council to the owner whose property had been thus forcibly acquired had not been given, and whether he had given his consent to the action of the Council.

Sir K. Wood replied that section 106 (1) of the Housing Act, 1925, gave powers to local authorities to enter on land included in a confirmed improvement scheme without the Minister's consent, and it was understood that the London County Council had taken possession of the property in question under the powers conferred upon them by this section.

### Smoke Abatement.

Mr. R. Wilson asked the Minister of Health whether he could make any statement as to the working of the Smoke Abatement Act.

Sir K. Wood said that the Act came into force only on July 1 last. By-laws as to the emission of black smoke had been approved for a number of authorities. Some Regional Advisory Committees had been set up. A draft order extending the Alkali Acts had been prepared and considered with representative bodies and the statutory inquiry would be held next month.

### Limits for Subsidy.

Mr. Hore-Belisha asked the Minister of Health whether, seeing that the price of a Council house ranged from as low as £300 to £500 and more in various localities, he could explain this difference, making allowance for local conditions and site, sewerage, and water factors.

Mr. Chamberlain said that the prescribed limits of area for subsidy houses ranged from 550 to 950 superficial feet, and variation in size therefore necessarily accounted for a large part of the difference in price. In addition to this and the other factors mentioned, a variation in building costs in different districts, and in standards of accommodation and amenity were contributory factors to the difference in range of prices in various localities, and the matter was, of course, influenced by the extent of the demand on the building industry in any area.

### New Bill.

Sir R. Gower has introduced a bill to amend the provisions in Part II. of the Housing Act, 1925, relating to improvement and reconstruction schemes. The measure has been read a first time.

### Rural Housing.

Mr. Chamberlain informed Mr. Everard that the county councils in England and Wales who had not submitted schemes under the Housing (Rural Workers) Act, 1926, were as follows:—Berkshire, Buckingham, Cambridge, Cornwall, Durham, Glamorgan, Hertford, Isle of Ely, Isle of Wight, Lincoln, (Kesteven), Merioneth, Norfolk, Radnor, Shropshire, Soke of Peterborough, Warwick. In some of these cases it was hoped that schemes would shortly be submitted, but in others the councils of the county districts had been declared the authorities for the purposes of the Act.

### Direct Labour Costs.

Mr. Robinson asked whether the Office of Works was engaged on the building of houses in any district or for any other department by direct labour; if so, what was the cost per cubic foot; and whether the Office of Works still administered any cottage property, the district where it was situated, and the rent charged for cottages of two, three, four, and five rooms respectively.

Sir V. Henderson said that the answer to the first part of the question was in the negative; the second part did not, therefore, arise. Particulars of the rents charged for houses on the several housing estates administered by the Office of Works showed that the accommodation generally consisted of four or five rooms. In addition to these houses, a few cottages occasionally became available for letting on coastguard stations scattered over the country, the rents of which varied according to the accommodation provided and to local conditions.

Particulars of rents charged for houses on the housing estates administered by H.M. Office of Works:—

| Estate. | No. of houses. | Rent per week. |
|---|---|---|
| *England.* | | |
| Dudley (temporary) .. | 301 | *5s. 10d. to 7s. 6d. |
| Barrow-Roosegate (temporary .. .. .. | 134 | *4s. to 6s. 3d. |
| Sheffield (temporary) .. | 684 | *8s. and 8s. 3d. |
| Woolwich group of estates (temporary) .. .. | 2,250 | *7s. to 10s. 6d. |
| Chepstow (permanent) .. | 406 | *5s. 3d. to 15s. |
| Birtley (temporary) .. | 906 | *5s. 9d. to 20s. |
| Scotswood (temporary) .. | 402 | *6s. to 7s. 8d. |
| *Scotland.* | | |
| Alexandria (temporary) .. | 150 | †5s. 11d. to 6s. 7d. |
| Invergordon (permanent).. | 118 | *8s. 3d. |
| Midlanark and Mossend (permanent) .. .. | 549 | †8s. 2d. to 10s. 6d. |
| Inchinnan (permanent) .. | 52 | †7s. 10d. to 11s. |

* Inclusive. † Plus occupier's rates.

### Charing Cross Bridge.

Col. Ashley, the Minister of Transport, replying to Sir W. Davison, said the committee of engineers charged with the investigation of the scheme of the Royal Commission for a double-decker road and railway bridge at Charing Cross would not be in a position to report before next spring.

### The London Squares.

Lord Londonderry again presided over a meeting of the Royal Commission on London Squares, held last Tuesday.

Sir Willoughby Dickinson, on behalf of the London Council of Social Service, said that experience had shown him how difficult it was even for a group of householders interested in the preservation of a square, to bring their legal rights to the test of a court of justice. This was one reason why Parliament should deal with the question. Otherwise, it was probable that even squares which were legally protected might be lost, because there was no one who would run the risk of testing the question. In fact, all that was needed by a builder was to buy up the rights of a few residents and then proceed to build with practical assurance that no one would contest his actions. That was what had happened in the case of Mornington-crescent and Endsleigh-gardens. Both those cases ought to have been subjected to legal inquiry. In the case of part of Euston-square, the land would undoubtedly have been built on had it not been for the accident that the matter came before Parliament, and that the L.C.C. had a chance of objecting. Similarly, Brunswick-square had been spared by the fact that the promoters of the scheme for moving Covent Garden Market had to apply to Parliament for that purpose. Unless Parliament intervened now, it was by no means improbable that the squares of London would gradually be absorbed, even in cases where there had been Acts of Parliament passed to regulate their use.

Two suggestions had been put forward for dealing with the problem. The first was that the local authorities should be authorised to purchase the freehold of the gardens on certain defined terms of payment, and retain them in their present state or throw them open to the public where that seemed desirable. The other proposal was that the squares should be permanently retained as gardens and be used for no other purposes. The first of these suggestions was open to objection. Any proposal to devote these gardens to the public would rouse the opposition of householders all over London who now enjoyed them. Also, in many instances, it would be difficult to transfer the user of them from private persons to the public, and, further, if the local authorities were obliged to pay large sums of money in order to secure the land as an open space, they would not do it. The main object was to prevent building, and if that were secured the future transfer of the land for public purposes might be left for Parliament to decide when the circumstances demanded it. The requirements of the case would be adequately met by an Act of Parliament that merely sterilised in the future these particular plots of ground.

Sir Edgar Bonham Carter, giving evidence on behalf of the Commons and Footpaths Preservation Society, the Garden Cities and Town Planning Association, the London Society, and other bodies, said that, in their opinion, the essential object was the preservation of the square gardens under their present conditions—that was, that the freehold should continue vested in the present owners, and the gardens should continue as private open spaces as the common amenity of the houses which now had rights over them. The preservation of the squares was one aspect of the town-planning problem, and a practical and fair method of preserving them was to be found in the application of town-planning principles to built-up areas. But legislation applying town-planning principles to built-up areas would be nugatory unless it was accompanied by a provision giving similar stability to the existing lay-out of the town as it would have if it had itself been laid out under the Town-Planning Act.

Legislation should provide that the London squares and similar open spaces must be preserved as private open spaces. It would safeguard the landowners' right to the freehold and the tenant's rights over such squares and open spaces.

In order to enable the present lay-out to be improved, it would be reasonable to give power to the L.C.C. under proper safeguards and with the sanction of the Minister of Health to consent to an exchange of the existing garden for an equal or greater area, provided that the land dedicated in exchange was appropriated as a private or public open space. Landowners should be authorised, if they wished, subject to the rights of the residents in the squares, to hand over the management and maintenance of the gardens to a local authority.

# THE LONDON BUILDING ACTS AND THEIR APPLICATION—XXXV

By H. V. MILNES EMERSON, A.R.I.B.A.

SECTION 218 completes the 1894 Act. There are four schedules in conjunction with the Act. The first schedule relates to the construction of walls of brick, stone, etc., and the second schedule deals with fire-resisting materials. The third schedule fixes the fees payable to district surveyors, and the fourth schedule gives a list of previous Acts wholly or partly repealed. These schedules have been quoted with the sections of the Act to which they relate.

Since the 1894 Act, the following supplementary Acts have been made :—

The London Building Act, 1894 (Amendment) Act, 1898.

London Government Act, 1899.

Factory and Workshop Act, 1901.

The London County Council (General Powers) Act, 1902 (dealing with exits in common lodging-houses, etc.).

Factory and Workshop Act, 1907.

The London Building Acts (Amendment) Act, 1905.

The London County Council (General Powers) Act, 1908.

The London County Council (General Powers) Act, 1909.

Housing, Town Planning, etc., Act, 1909.

City of London (Various Powers) Act, 1911.

Education (Administrative Provisions) Act, 1911.

The Metropolitan Water Board Act, 1913.

The London County Council (General Powers) Act, 1915, 1920, 1921 and 1923.

The Town Planning Act, 1925.

The Amendment Act of 1898, section 3, repeals section 14 of the 1894 Act, rendered necessary by the decision L.C.C. *v.* Aylesbury Dairy Co. (1898), 77 L.T. 440.

SECTION 4.—This section is an amendment of subsection 5 of section 13, 1894 Act, and enacts that no dwelling-house outside the City shall be erected within 20 ft. of the centre of the roadway.

SECTION 5.—This section takes the place of section 138 of the 1894 Act, relating to the service of a notice, summons or order in the case of dangerous or neglected structures, and was rendered necessary owing to the decision of Q.B. in the case of Reg *v.* Mead (1898), 77 L.T. 462.

SECTION 6.—This is an amendment of section 200 (Offences against the Act), subsection 3 (*e*) of the 1894 Act. The original section, with the words added by this section (in italics), now reads as follows :—

(*e*) Sets up, erects, *retains* or adapts any building or structure to which Part VII of this Act applies without having obtained any *approval or* licence required by that Part of this Act, or makes default in observing any of the conditions contained in such *approval or* licence (shall be liable to a penalty of £20 a day, etc.).

This section was altered as above owing to the decision of Reg. *v.* Cluer (1897), 77 L.T. 439.

SECTION 7.—Section 200, subsection 3, the penalty of £20 a day, etc., quoted in the last section in brackets, is amended to a penalty not exceeding £2 for each offence, and a penalty not exceeding £20 a day during the continuation of the offence.

The London Building Acts (Amendment) Act, 1905, chiefly deals with means of escape from fire.

SECTION 6 of this Act defines expressions used, and sections 7 to 14 (inclusive) deal with means of escape from new and old buildings. These sections have been dealt with in connection with the repealed sections 61, subsection 2, and 63 of the 1894 Act.

### London Government Act, 1899.

SECTION 5 of this Act provides for the transfer of certain powers and duties from the London County Council to each Borough Council as respects their Borough. The following are the powers transferred :—

Power, under section 84 of the London Building Act, 1894, to license the setting-up of wooden structures, and power to take proceedings for default in obtaining or observing the conditions of a licence under that section.

Power, under section 134 of the same Act, relating to the removal of unauthorised sky-signs.

Power, under section 199 of the same Act, relating to the removal of obstructions in streets.

Power, under section 170 of the same Act, relating to the demolition of buildings in case of the conviction for an offence against the Act, or by-laws made under it, providing that the Borough Council concerned have obtained the conviction.

Power to take proceedings in respect of timber or other articles piled, stacked or stored in contravention of sections 197 and 200 (11) (*k*) of the same Act, such power only to be exercised within the borough.

The Factory and Workshop Act, 1901 and 1907, deal with means of escape from fire, etc., and the regulations of the L.C.C. dealing with same have been quoted.

Since 1905, amendments to the London Building Acts have been obtained by the London County Council under a General Powers Act, and not by a separate Building Act.

The first amendment to the London Building Act of 1894 under this method was contained in Part III of the London County Council (General Powers) Act, 1908. This Act repealed sections 75, 76 and 77 of the 1894 Act, and provided new regulations for the cubical extent of buildings, etc., which have been dealt with in these articles under the repealed sections 75, etc., of the 1894 Act.

The London County Council (General Powers) Act, 1909, Part IV, makes provision with respect to buildings of iron and steel skeleton construction, and as to use of reinforced concrete.

SECTION 21.—In addition to the meaning assigned to words and expressions in the previous Acts, the following are introduced :—

For the purposes of this Part of this Act the expression "pillar" shall, unless otherwise stated, mean a metal pillar, and shall include all columns and stanchions or an assemblage of columns or stanchions properly riveted or bolted together; and the expression "girder" shall mean a metal girder or joist; and the expression "Tribunal of Appeal" means the Tribunal of Appeal as constituted by this part of this Act.

*Note.*—For the purposes of this part of the London Building Acts, the Tribunal of Appeal consists of an additional member appointed by the Council of the Institution of Civil Engineers.

SECTION 22, together with the subsections, is the main section of the Act, and is as follows :—

Notwithstanding anything contained in the principal Acts requiring buildings to be enclosed with walls of the thickness and of the materials therein respectively described, it shall be lawful to erect, subject to the provisions of this section, buildings wherein the loads and stresses are transmitted through each story to the foundations by a skeleton framework of metal or partly by a skeleton framework of metal and partly by a party wall, but buildings so erected shall (subject to any exemptions contained in the principal Acts or any of them) be subject to and comply with all such provisions of the principal Acts or any of them, and any by-laws in force thereunder as may not be inconsistent with or contrary to the provisions of this section.

The following are briefly the provisions that apply in respect to the construction of the skeleton framework, foundations, walls, floors, staircases, and other parts of the structure of such buildings :—

All rolled steel must comply with the latest British Standard specification. The skeleton frame and party walls must be capable of sustaining safely the whole dead load and superimposed load. The pillars in external walls and girders must be encased with incombustible material at least 4 in. thick, but the underside of girders, edges of flanges, plates and angles can be covered with incombustible material 2 in. thick, and all internal pillars and girders are to be encased to the satisfaction of the District Surveyor with not less than 2 in. of brickwork, terra-cotta, concrete, metal lathing and plaster or cement. The upper surface of girder flanges and the lower surface of subsidiary joists can have a casing 1 in. thick.

Wood firring must not be used in any casing. In buildings of one story, and not more than 25 ft. high, the casing to pillars and girders can be omitted.

Girders must not exceed a span of more than 24 times the depth of the girder unless the deflection of the girder is less than one four-hundredth part of the span. Two or more girders acting together must have separators not exceeding five times the depth of the girder apart, and separators immediately over all supports and under all concentrated loads. The girders supporting external walls must be placed at the floor level of a story, or at a distance of not more than 5 ft. above or below such floor level. Rivets must be used in all cases where reasonable, and although bolts are often used in fixing the steelwork together on the job, the framework is much better riveted together. Bolts, where used, must extend through the full thickness of the nuts attached thereto, and the nuts must be secured to prevent them becoming loose.

External walls for the top 20 ft. to be not less than 8½ in. and below the 20 ft. to be not less than 13 in., providing that the length and height of the wall between the supporting framework does not exceed the provisions of the first schedule of the 1894 Act, otherwise the external wall must be in accordance with that schedule. The provisions of the schedule are as follows :—Where the wall does not exceed 25 ft. in height (whatever its length) it shall be 13 in. thick at its base.

Where the wall exceeds 25 ft. but does not exceed 30 ft. in height and does not exceed 45 ft. in length it shall be 13 in. at its base.

Where the wall exceeds 30 ft. but does not exceed 40 ft. in height and does not exceed 35 ft. in length it shall be 13 in. at its base.

Party walls must be in accordance with the provisions of the principal Act. All brickwork, terra cotta, etc., must be built in Portland cement mortar, the Portland cement to conform with the latest British Standard specification. Party and other internal walls not carrying weights or surrounding steelwork can be in lime mortar.

Plates and bars used in pillars must not be less than ¼ in. thick. Hollow pillars are to be filled with concrete or properly sealed at both ends with riveted metal plate. Cast iron pillars are to be not less than 5 in. wide, and the thickness of the metal to be ¾ in. or one-twelfth of the least width of the pillar, whichever is the greater. The cap and base to be part of the pillar or connected with a properly turned and bored joint. The pillar to be fixed to the girder with not less than four bolts of not less diameter than the least thickness of the metal in the pillar. If more than four bolts are used the diameter can be reduced in proportion, but not below ¾ in. diameter per bolt. The area of the base of each pillar must be sufficient properly to distribute the load upon the foundations and properly bedded to transmit the load uniformly, whilst the stress in any metal interposed between the ends of a superimposed pillar and a pillar beneath must not exceed the stress on the superimposed pillar.

# ARCHITECTS' & BUILDERS' INQUIRY BUREAU

*We are glad to give questions and answers, but cannot accept responsibility for contributed replies, especially on legal matters.*

*May we appeal to our correspondents to submit their queries on paper of a size easily filed, and written as legibly as possible, or, better still, in typewriting!*—ED.

### Subsidy Question.

[REPLY TO C.O.W., NOVEMBER 18.]

SIR,—The local authority is quite justified in refusing to grant a subsidy on the grounds that all operatives' time must be reckoned in the value. Your correspondent will readily see what abuses could enter into the building of subsidised houses under any other circumstances. For instance, a group of operatives could combine to build a house without wages, and so render only the cost of materials as the cost of the house. In this way a house of about £1,300 value would be eligible for the subsidy, which, as Euclid says, is absurd. R. A. A.

### Recovery of Fees.

[REPLY TO "NON-MEMBER," NOV. 18.]

SIR,—The rule is that if there is a contract between the employer and his architect for the latter to perform an entire or whole work to conclusion, then, unless payment by instalments is provided for, nothing is payable to the architect until the whole work is completed. If, however, there is no special contract, as appears in this instance, then "Non-Member" can recover from time to time for work he has done in preparing drawings, etc., and obtaining tenders for the postponed work a "reasonable" remuneration, and should be successful. He could, of course, put forward the R.I.B.A. scale of fees, even though he is a non-member. They are not binding on an employer and have not always been accepted by the Court, but nevertheless have been held to be "reasonable" on many occasions. (See Chapter XIV, "Creswell on Building Contracts."). T.

### Measuring of Sub-Contractor's Work.

[REPLY TO MEASURER, NOVEMBER 18.]

SIR,—The work in question being pavings, there is no question about its accessibility for re-measurement. The only work in which it is necessary for surveyor and contractor to measure together and agree is work which is to be covered up. In other cases it is only a matter of doing things in the convenient way. If the contractor in this case disagrees with the measurements, they are there for him to check. I do not see that he has any right to make the claims described, but one thing is certain, viz., that the surveyor has the right to all measurements and rates.

SURVEYOR.

### Overhanging Guttering.

[REPLY TO "ROSS," NOVEMBER 18.]

SIR,—Presumably the land purchased is vacant land; and it is the boarding and guttering on the adjoining owner's property that overhangs the said vacant land. If this be so, and the property concerned is outside the Metropolis, then unless the adjoining owner can prove his right to an "easement" in respect to the gutter overhanging, "Ross" can call upon the former to remove it altogether and no liability anent it attaches to the latter. If, however, an "easement" does in fact exist, then "Ross" should make the best terms possible with the adjoining owner, which may, however, end in his having to carry out the work he describes to the full. In the Metropolis, under the London Building Act, 1894, he would be compelled to do the work described whether there is an existing "easement" or not.

But "Ross" does not put his question clearly. It may be that it is the boarding and guttering on his own building that overhangs the property of the adjoining owner. In this case, if he wishes to go higher than the adjoining property he must carry out the work described effectually to get rid of the rainwater of the lower premises—unless some other cheaper means can be devised. He must get the rainwater away so as to cause no nuisance to the adjoining owner. C.

### Zinc Roof and District Surveyor.

[REPLY TO "PRACTICE," NOVEMBER 18.]

SIR,—Will "Practice" explain what he means by "repair" in the second paragraph of his reply, in your issue for November 18, to "Zinc's" question in *The Builder* of November 11, apart from any dangerous condition of a structure? I have in mind that certain materials are specified for the construction of walls, encasement of the steelwork of framed buildings, covering of roofs, etc. These are materials that must be used, as against others not scheduled.

Would a district surveyor be expected to survey buildings, as in "Zinc's" case, where a roof is to be wholly re-covered, keeping in view the point that a roof covering is a most necessary part of the construction of a completed building? DOUBTFUL.

### Public or Private Road?

[REPLY TO "SURREY," NOVEMBER 25.]

SIR,—Under section 4 of the Public Health Act, 1875, "Street" is defined to include, if not inconsistent with the context, *inter alia*, "any passage, whether a thoroughfare or not," and in Walthamstow U.D.C. v. Sandell (1904), 68 J.P. 509, a passage opening from a highway and used as a means of access to the back premises of five houses, and forming a *cul-de-sac*, was held to be a "street" within section 150 of the Act. Similarly "street" in the Private Street Works Act, 1892, has a like significance to that which it has in section 150 of the Public Health Act, 1875, and includes a *cul-de-sac*.

Now, it is immaterial in the case of a "street" whether there is a thoroughfare or not. In the instance referred to in the question, there is, of course, admittedly access at one end from a main street; and, indeed, by user, it would appear that there is now access from both ends.

Under section 150 of the Public Health Act, 1875, an urban authority has power to compel the "making up" of private streets, and to "take them over" as highways under section 152. The like applies in a rural district, if the section has been put in force under an order of the Minister of Health, but the section does not apply in a district in which the Private Street Works Act, 1892, has been adopted; though, as previously pointed out, sections 6 and 19 of the last-named Act contain similar provisions as to the "making up" and "taking over" of streets. It follows, therefore, that a rural district council can "take over and make up" the *cul-de-sac* referred to.

In general, the local authority concerned prepares the plans and specification for the work, which must satisfy their requirements. In this matter, it would appear, the authority has much latitude, and, indeed, no two authorities agree as to what the extent the standard of requirements should be. However, under both Acts there is ample opportunity afforded to frontagers for making objections, and for putting forward alternative suggestions which should reasonably satisfy the authority. In the case under review, it might be put that the way "leads to nowhere," and that it is not subject to "much and through traffic," and that the requirements are excessive. However, in all these questions "Surrey" would do well to be legally advised before proceeding. LAW.

### Thistles.

SIR,—Can anyone suggest an effective and not too expensive method of ridding a large field of thistles? It is feared that during next autumn the thistledown will be blown and self-sown in the gardens of houses which are being erected in close proximity.

"NEIGHBOURLY."

### Exterior Treatment for Bungalow, etc.

[REPLY TO G. G., NOVEMBER 18.]

SIR,—(1) Your correspondent will find the greatest difficulty in killing the creosote, and, when ultimately painted, the cost of maintenance will be considerable. I should suggest battening the walls and lathing and cement rough-casting, as the wisest course in the long run.

(2) The trouble points to absence of damp course. Strip the bottom three feet of plastering, and render in waterproofed cement. Waterproofing solutions are generally more effective when combined with cement than when used as a surface treatment.

TRY IT.

### Iron or Lead Pipes.

[REPLY TO F. L., NOVEMBER 18.]

SIR,—This is generally regulated by the local water authority, who should be consulted. Much depends on the nature of the water supplied. NORULE.

### Floor Covering Composition.

[REPLY TO BM/FAW4, NOVEMBER 18.]

SIR,—Surely the best way will be to lay a new ¾-in. deal grooved and tongued flooring on top of the old boards. Almost all compositions would crack on top of a wood boarded floor. FLOOR.

### Flooring Preparation.

[REPLY TO ANXIOUS, NOVEMBER 18.]

SIR,—Boarding laid direct on concrete should be bedded in tar mastic and creosoted on the underside. PRACTICE.

### Electricity or Crude Oil.

SIR,—We are thinking of putting down a new crude-oil cold-starting engine or installing electric power to run our machine joinery works. The cost of electricity per unit would be 2¾d. The running costs for crude oil would be .55 lb. per b.h.p. hour. An 18-b.h.p. engine will do all the necessary work required. Which is the cheaper proposition of the two?

WM. SHARP & SONS.

### Timber Mark.

SIR,—Can you tell me the port of origin of boarding marked in red KA $\frac{W}{JA}$ NA, and also what quality this implies?

NORTHERN.

## HOUSING.

The following questions on the housing position have been asked and answered in Parliament:—

### Empty Houses.

Mr. T. Thomson asked the Minister of Health if he was aware that a large number of dwelling-houses were kept empty and withheld from occupation on account of the owners wanting to obtain a higher sale price, and would he take steps to remedy this.

Sir K. Wood said that the Minister was aware that there was always a certain number of unoccupied houses which were held for sale, but he did not consider that it would be practicable to legislate on the subject.

### Rural Housing.

In reply to Mr. T. Williams, Mr. Chamberlain said that at October 1 last, the latest date for which returns were available, the number of dwellings in respect of which applications for assistance had been received by local authorities under the Housing (Rural Workers) Act, 1926, was 271. Assistance had been promised in respect of 31 dwellings, and on 15 dwellings work had been started.

### Houses under Construction.

Mr. Chamberlain informed Mr. Williams that the total number of houses in course of erection under the Acts of 1919, 1923 and 1924 on May 1, 1927, was 117,658. Particulars relating to November 1, 1927, were not yet available, but the corresponding number at October 1, 1927, was 52,929.

# THE BUILDING TRADE

## POINTS IN CONNECTION WITH THE LAW OF LANDLORD AND TENANT—VI.

HAVING in our last article endeavoured to explain some of the principles which the law applies to options to purchase or renew as contained in agreements and leases it now only remains to refer to a few recent cases where the effect of options is illustrated, and in connection with the last case we cited Batchellor *v.* Murphy (1926, A.C., 63; *The Builder*, November 27, 1925), Hollies Stores *v.* Timmis (1921, 2 Ch., 202; *The Builder*, November 25, 1921), should be referred to because the terms of the option to call for a further lease contained a provision somewhat similar to the agreement made in Batchellor *v.* Murphy. Premises were leased to the plaintiff company in 1914 for a term of seven years, and the company and three persons named in the lease jointly and severally covenanted for payment of the rent. The lease contained an option that if the lessees desired to take the premises for a further term of seven years and gave six calendar months' notice of their intention to do so a further lease should be granted "Such lease to contain clauses so far as possible identical with the terms thereof, including the covenant for payment of rent hereby reserved." One of the persons named as guarantors had died in 1917 and in 1920 the lessor had died. Six calendar months before the expiration of the lease the company applied for a further lease and offered to name another guarantor or to make a deposit for the rent or even to pay the seven years' rent in advance, but the personal representatives of the lessor refused to grant a further lease. In an action for specific performance of the agreement brought by the company the Court held that the effect of the agreement was that the new lease was to contain clauses identical so far as possible with those in the existing lease and that one of those provisions was the covenant by the three named guarantors to pay the rent and that that having become incapable of performance the landlords could not be compellel to grant a different lease even though the rent were equally well secured.

In Austin *v.* Newman (1906, 2 K.B., 167; *The Builder*, September 15, 1906), under an agreement of tenancy, a tenant entered into possession of premises "for a period of twelve months with the option of a lease after the aforesaid time at a rental of £30 per annum." Before the period of twelve months had expired the landlord demanded possession at the end of that period. A Divisional Court held that under this agreement the tenant had a right to claim a lease for a further period of at least one year after the expiration of the first twelve months, and one of the judges expressed the opinion that under this option very possibly the tenant could have claimed a lease for his life.

This case should, however, be considered in the light of a decision in the Court of Appeal in Gray *v.* Speyer (1922, 2 Ch., 22; *The Builder*, April 21, 1922). There the plaintiff was the lessee of a house under a lease expiring in 1975, and he let a portion of the house to the defendant for one year from March 25, 1917, with an option to continue for another two years from March 25, 1918, on giving the landlord two months' notice of his intention so to continue. When the time came to exercise the option the defendant proposed to continue for one year only with an option to continue for a further year, and this was agreed to, but in January, 1919, before the year had expired the parties came to the following agreement—that the tenant exercised his option to continue the tenancy until March, 1920, and that the landlord granted the tenant the option to continue the tenancy after March, 1920, from year to year provided he gave one month's notice of his intention to continue, but that in the event of his desiring to put an end to the agreement he should give two months' notice. In August, 1920, the plaintiff had acquired the head lease and on September 21, 1920, he gave the defendant notice to quit on the following Lady Day, but the defendant disputed the plaintiff's right to give this notice and gave the plaintiff notice of his intention to exercise the option to continue the tenancy for another year. In this action the plaintiff claimed a declaration that the defendant was not entitled to a perpetual right of renewal and that the notice to quit was effective to determine the tenancy on March 25, 1921, whilst the tenant counterclaimed for a declaration that he held as tenant from year to year with the right of perpetual renewal during the term of the head lease. The plaintiff did not claim possession, his notice to quit not having expired, and the defendant did not claim specific performance, so the judgment could only be declaratory. The Court below had held that under this agreement the option when once exercised created a tenancy from year to year with the ordinary incidents and that the option to perpetual renewal was repugnant to such a tenancy and must be rejected—(see on this point our fifth article)—but the Court of Appeal held that the true effect of the agreement was not to create a tenancy from year to year but to extend the option to continue, at its date limited to one year, to a succession of reversionary terms each for one year certain, provided the requisite notice was given before the expiration of each succeeding term, but that such an agreement not being under seal as required by 8 & 9 Vic. c. 106 was void and both the claim and counterclaim were dismissed.

It is not clear under this decision what the position of the parties would be; there is, however, a note to the report that at the hearing of the appeal it appeared that the plaintiff had accepted rent from the defendant for a period after the expiration of the notice to quit, and presumably this accounted for the fact that the claim for a declaration that the notice to quit would be valid was also dismissed.

It may be convenient here to refer to a case where there was no question of any necessity for a deed, the agreement being for less than three years, but where the question was whether an unsigned agreement to let a house which contained an option could be enforced by a decree of specific performance. In this case, Brough *v.* Nettleton (1921, 2 Ch. 25), the defendant, a builder, had verbally agreed to let a house to the plaintiff for 2½ years from October 1, 1917, at the yearly rent of £37 10s. with an option to the plaintiff of purchasing the house for £500 at any time during the tenancy on giving notice of his intention so to do. The next day the plaintiff had called at the defendant's office and had given the clerk-in-charge (who, however, had no authority to grant leases) the terms of the above verbal agreement, who had filled them into a printed form used by the defendant where the lease exceeded three years, but including the option. The plaintiff signed this form, but it was not signed by the defendant. The plaintiff entered into possession and on December 30, 1919, he wrote to the defendant exercising the option. The defendant then denied that any such agreement had been entered into, but alleged that he had only let the house to the plaintiff at a yearly tenancy. The plaintiff brought this action for specific performance of the parol agreement and the Court, accepting the plaintiff's statement of the facts, held that the taking possession was a part performance within the Statute of Frauds, which entitled the plaintiff to give evidence of the entire parol agreement, including the option, and a decree for specific performance was granted.

It was held in Hand *v.* Hall (1877, 2 Ex. Div., 355) that a lease for less than three years need not be under seal under 8 & 9 Vic. c. 106, merely because it contains an option by which the term may be extended beyond three years. The Statute of Frauds requires leases for more than three years to be in writing, and 8 & 9 Vic. c. 106, section 3, required such leases to be by deed. (See new section 52, Fraud of Property Act, 1925.)

In Stewart *v.* Massett (Weekly Notes, 1924, 267; *The Builder*, November 28, 1924), by a lease dated June 12, 1912, for a term of 21 years from Lady Day, 1910, at a rent which increased at each period of 7 years, there was a proviso that the tenancy should be determinable at the end of the first seven or fourteen years by either party giving to the other six calendar months' previous notice in writing, but there was a further proviso that if the lessee should be desirous of having a further lease for a term of seven years and should give the lessor six calendar months' notice of such desire before the expiration of the term of 21 years, then a further term would be granted, the lease to be in the same form with such modifications as the lessor's solicitor might approve. On August 20, 1923, the lessee by letter purported to exercise this option for a further lease, but the plaintiff (in whom the reversion had become vested) declined to grant a further lease, and acting in pursuance of the terms of the lease gave the tenant notice to quit on Lady Day, 1924, that is to say, at the end of the first 14-year period. On an application for a declaration the Court held that the option only came into operation if the lease continued without either party having determined it, into the third and last period of 7 years.

We may note here that where under a tenancy agreement it was agreed that the rent should be paid quarterly in advance but an option was given to the tenant to purchase the lessor's interest in the house provided that the tenant should "in the meantime have duly paid the said rent hereby reserved" and the tenant had delayed paying the rent due December 25, 1907, until January 10, 1908, and then on March 20, 1908 had exercised the option, it was held that "duly" did not mean "punctually" and the condition precedent to the exercise of the option had been fulfilled (Starkey *v.* Barton, 1909, 1 Ch. 284).

We may conclude this article by referring to another case which shows the care which should be exercised in framing options and putting them into operation. In Fowler *v.* Willis (1922, 2 Ch., 514; *The Builder*, June 30, 1922), by deed dated April 15, 1920, the defendants demised to the plaintiffs certain premises for a term of three years, and by the lease it was provided that the plaintiffs should "have the option of purchasing all the estate interest and title which is at this the date of these presents vested in the landlords in and to the freehold premises hereby demised, at a price not exceeding £3,000."

By a letter dated April 15, 1921, the plaintiffs exercised this option, and forwarded a deposit. The plaintiffs subsequently learned from the abstract of title that there was a mortgage on the property for £500, and they required the defendants to perfect their title by redeeming the mortgage. The landlords declined to do this and contended that the contract created by the option was for the purchase of the property subject to the existing mortgage, but they offered to release the plaintiffs.

The matter came before the Court for a declaration and the Court held that the matter really turned on two questions.

First, what was "the estate interest and title" of the mortgagees, and, secondly, what was the estate interest and title of the landlords? The answer to the first question was that it was the legal fee simple subject to the landlord's equity of redemption. The answer to the second question was that the landlord's estate interest and title was the equity of redemption. Therefore as the option was for the purchase of "all the estate interest and title" which was vested in the landlord at the date of the lease (the mortgage deed was dated February 22, 1910), the result of its exercise was that the plaintiffs had agreed to purchase the equity of redemption subject to the mortgage. As the tenants were not desirous of being relieved of the contract a declaration was made that there was a valid contract for the sale of the equity of redemption and a decree for specific performance. Of course, under such circumstances no decree would have been made against unwilling purchasers, but to avoid litigation the case shows that in exercising options to purchase it is well to secure in the lease that the property shall be sold unencumbered.

## LEAD PAINT (PROTECTION AGAINST POISONING) ACT 1926

THE following order, dated November 14, 1927, has been made by the Secretary of State under Section 2 of the Lead Paint (Protection against Poisoning) Act, 1926, in respect of the employment of young persons as apprentices in the painting trade, and of women and young persons in work of decorative design:—

In pursuance of the powers conferred by Section 2 (Prohibition of employment of women and young persons in painting buildings with lead paint) of the Lead Paint (Protection against Poisoning) Act, 1926, I hereby make the following order:—

(a) The said Section shall not apply in the case of any male young person employed as an apprentice in the painting trade if he is employed under an indenture of apprenticeship or under an established custom of regular apprenticeship, and if his name, age, and the date on which he was first engaged as an apprentice, are entered in a separate list attached to the register of persons employed which the employer is required to keep under Section 4 of the said Act.

(b) The following special decorative work shall be excluded from the provisions of the said Section, namely, the execution of wall or ceiling paintings, or any similar work of decorative design.

Nothing in this Order shall be deemed to relieve any employer from any of the obligations imposed by Section 2 (Regulations for employment of women and young persons in processes involving the use of lead compounds) of the Women and Young Persons (Employment in Lead Processes) Act, 1920.

### Manchester Museum Extension.

Lord Crawford and Balcarres, Chancellor of the University, presided on Monday at the opening of a new extension of the buildings of the Manchester Museum, which form a part of the University block and, like the institution itself, are held on trust by the University for public purposes.

### University College, Nottingham.

The Mayor of Nottingham (Alderman E. Huntsman) has received an official intimation that H.M. the King has consented to open the new buildings of University College, Nottingham, given by Sir Jesse Boot. The University buildings, when complete, will, with the park in which they are situated, the playing-fields, and the road, a mile and a quarter long, known as University Boulevard, have cost Sir Jesse Boot over £500,000. Mr. P. Morley Horder is the architect.

## NEW BUILDINGS IN LONDON

**Aldwych.**—Messrs. John Mowlem & Co., Ltd., Ebury-bridge-road, S.W.1, have received the contract for the foundations of the new west wing of Bush House, W.C. Messrs. Moreland, Hayne & Co., Ltd., 80, Goswell-road, E.C.1, will supply the whole of the steel framework. Messrs. Helmle, Corbett & Harrison, Bush House, W.C.2, are the architects.

**Barnes.**—SCHOOL.—The London County Council has recommended, subject to the consent of the Minister of Health, the freehold of a site at Castelnau estate, having an area of about 2.43 acres, with a frontage of about 458 ft. to Stillingfleet-road, be sold to the Surrey Education Committee for the erection of an elementary school.

**Chelsea.**—Old property in King-street is being pulled down preparatory to the erection of a row of shops, with flats above. The architect is Mr. C. H. Roberts, A.R.I.B.A., 58, Frith-street, W.1.

**Coulsdon.** — HOUSES. — Messrs. Thomas & Son, builders, of Bramley-avenue, are to erect 44 houses in Biggin Wood-road.

**Croydon.**—HOUSES.—The Croydon Borough Council are about to invite tenders for the erection of 96 houses on the Mitcham-road housing estate.

**Croydon.**—HOUSES.—Messrs. Parish, Tyler & Crump are to erect 33 houses in Shirley-avenue.

**Croydon.**—HOUSES.—The Croydon Borough of Southend-on-Sea, has secured the contract for the erection of two blocks of flats in Upper Coombe-street, Croydon, for the local Council. The tender price is £16,143.

**Downham.**—SCHOOL.—The London County Council are to erect an open-air school on a site at Downham, Lewisham.

**Edmonton.** — HOUSES. — Messrs. Howis & Belcham, architects, 77, Chancery-lane, W.C.2, have prepared plans for Mr. A. W. Jones, for the erection of 42 houses in Bounces-road and Montagu-road.

**Exhibition-road.**—The Royal Geographical Society are to sell 40,000 square feet of land on the Lowther Estate in Exhibition-road, S.W., for the erection of a large block of residential flats. Plans have been prepared by Messrs. T. P. Bennett & Son, FF.R.I.B.A., 41, Bedford-row, W.C.1.

**King William-street.**—Plans have been prepared for the erection of a large block of business premises on a site at No. 40, King William-street, E.C. 4. The architects are Messrs. M. E. & O. H. Collins, 115, Old Broad-street, E.C. 2.

**Lewisham.** — HOUSES. — The Lewisham Borough Council are inviting tenders for the erection of 102 houses and 112 flats on the Lewisham Grove-park housing site. Mr. W. R. Davidge, F.R.I.B.A., of 5, Victoria-street, S.W.1, is the architect.

**Ludgate Hill.**—Extensive premises at No. 2, Ludgate Hill, E.C. 4, are to be vacated shortly for conversion into branch offices for the National Provincial Bank, Ltd.

**Newington Butts.**—Large branch bank premises are to be erected upon the site of Nos. 39-41, Newington Butts, S.E.1, for the Midland Bank, Ltd. Plans have been prepared by Messrs. Whinney, Son & Austen Hall, 8, Old Jewry, E.C.2.

**Paddington.**—ADDITIONS.—Mr. Herbert A. Welch, F.R.I.B.A., of 7, New-square, Lincoln's Inn, W.C., has prepared for alterations and additions, No. 31, Cambridge-place, and the adjoining premises in Norfolk Mews East.

**Poplar.**—PREMISES.—The Poplar Borough Council has approved plans submitted by the London Co-operative Society, Ltd., Whitta-road, Capel-road, Manor Park, E.12, for building and drainage of 270, High-street, Poplar, E.14.

**Richmond.**—Large showroom premises are to be built in George-street for Messrs. Montague Burton, Ltd., and a contract has just been placed with the Lansdowne Building Co., Lansdowne-road, S.W. 9. The architect is Mr. H. Wilson, of Leeds.

**Twickenham.**—Messrs. F. W. Woolworth & Co., Ltd., have acquired premises at 31-32, King-street, which are to be converted into a branch stores. Plans have been prepared by the company's architect.

**Twickenham.**—A site on the Richmond House estate in King-street and Wharf-lane has been acquired for the erection of a block of three-story buildings, comprising 10 shops and flats. Plans are being prepared by Messrs. D. Morris & Sons, 57, Charing Cross, S.W.1.

**Uxbridge-road.**—BUILDINGS.—The Peabody Donation Fund has decided to carry out the proposal to erect 246 self-contained tenements on about six acres of land near the Uxbridge road.

**Woolwich.**—ADDITIONS. — Mr. C. Masey, architect, Grecian-chambers, Devereux-court, Strand, W.C., has prepared plans for additions to the Empire Cinema in Garibaldi-street.

**Wandsworth.**—FLATS.—The Housing Committee of the Wandsworth Borough Council have given instructions for tenders to be invited for erecting a block of 18 two-bedroom flats on the Park Dairy site, Merton-road, on the Southfields Estate.

## THE MONOMARK AND THE BUILDING INDUSTRY

THE Monomark system, invented by Mr. William Morris, was described in our columns when it was first introduced to public notice some time ago. The system has since gained considerable support from architects, manufacturers, and merchants, and some account of its special usefulness to the building industry may now be given.

The system may be briefly explained as follows:—British Monomarks Limited issue to manufacturers and merchants an individual and unduplicated Monomark, which consists of two or more characters which may be the initials of the firm or the brand name of its products. These characters are not a Monomark unless prefixed by BCM, which means British Commercial Monomark. The merchant or manufacturer is invited to stamp his goods with his monomark, either in place of his name and address or in conjunction with it, preferably the former.

The system establishes between the maker or seller of an article and a prospective buyer a link of three or four letters which constitutes a method of communication. For instance, an architect may become interested in a certain brick or tile. He has only to turn it up and read the Monomark upon the edge or the underside, make a note of it, and on returning to his office, write the Monomark on a postcard and ask for particulars or for a representative to call. Had the brick or tile been branded with a trade-mark, the architect could not communicate with the maker until he had discovered the owner of the trade-mark.

Fittings and building materials are often defaced by the name and address of the maker or merchant. Under the Monomark system the identity of the manufacturer can always be safeguarded by the imprinting of the neat and inoffensive Monomark, standing as it does for a full name and address.

The Monomark Company has entered into an arrangement with the General Post Office whereby letters may be addressed with merely a monomark and the addition of the words "London, W.C.1." The Monomark stamped upon an article may be written upon an envelope and posted as if fully addressed, and the letter will be delivered unopened to the maker or the merchant of the article in question.

The Monomark Company claim that they have enough unduplicated Monomarks to give one to every firm in the world, no Monomark being composed of more than five characters. No British Commercial Monomark is issued to a foreign concern. Further information on the system may be obtained on application to Monomark House, 95-99, High Holborn, W.C.1.

## WHITE LEAD.*

WE have advanced far since the industrial revolution first began. We now look upon our workers as something more than a horde of automata from whom the last ounce of energy must be extracted, and we have found that the healthy and contented worker gives of his best more freely than does he who is down-trodden. We therefore protect him from the dangers of machinery and power-driven edged tools; make his place of work well ventilated and sanitary, and do all we can to preserve life within the industrial sphere. Such things are the obvious duty of humanity, and, in principle, beyond the reach of contention. Where contention appears in matters of detail we do well to be guarded in judgment and cautious in action, for it is easy to grasp a few facts of a case and interpret them as pointing in a single common direction, regardless of what we are doing elsewhere.

The case for making illegal the use of white lead in painting work can be made out very conclusively as far as the man in the street is concerned. A certain sequence of facts of which most of us are aware would seem to leave no room for argument if taken on their face value. Lead poisoning is a dread disease, slow and insidious : white lead in paint can transmit it to the worker both in manufacture and in use : painters as a class have been shown to be particularly liable to infection : substitutes have been found to be efficient, though containing no white lead in their composition. What argument can there be against legislation forbidding the use of this dangerous poison?

Most of us, however, are familiar with the arguments against such a drastic step. In the first place it is no small matter to wipe out completely an entire industry, or at least to disorganise it completely while it is reconstructed for another purpose—the manufacture of efficient substitutes. Such a thing cannot lightly be undertaken. Again, many skilled craftsmen regard white lead as essential to the composition of a lasting paint for certain purposes. Good workers there are who shake their heads sadly over the material in which they have no faith, and good mastermen protest that they can only guarantee work for which they are allowed a free choice of material.

Very well (we say), at least let us have regulations under which the use of this material, which you say is essential, may be made as little dangerous as possible. Let us have rules of cleanliness, respirators, and wet rubbing down. Here again the obvious is not the whole case. Cleanliness is one of the first and most important safeguards; but we know perfectly well that—to modify an old proverb—you can take a man to water but you can't make him wash. Pains and penalties for the non-observance of rules of cleanliness may work very well in the factory, or on the big job under careful supervision, but the man on the little country job, or on the bit of town jobbing work, is too often out of sight and out of mind, and men hate to be finnicky in their daily work. Then there is the respirator. Here again it is easy to make the rule but difficult to enforce it. A respirator is an abominably uncomfortable thing to wear as many war veterans know too well, and the slow feeble attacks of lead poisoning are not the insistent warning of mustard gas.

Finally there is the much-vexed question of wet or dry rubbing down. We have solved the problem of excessive consumption of sand-paper by the introduction of waterproof papers, but we have yet to find a way of applying the process that will equal the speed of the older and more dangerous method. Time is money, and high costs mean a check to the building industry. Does not a lot of property fall into decay through the reluctance to spend on that necessary coat of paint, and are we not in danger of creating yet another housing problem if we make painting still dearer? And so we fly off at a tangent, to find that we really know very little indeed about the subject. We want more facts, and, with those we know, we want them marshalled before us so that the jury can announce their verdict and see that the sentence is carried out.

"White Lead," a publication of data collected by the International Labour Office, is actually an attempt to do for us this service. It comes very near to achieving its purpose. Beginning with an historical sketch of the movement against the use of white lead in paint, and passing through medical, statistical, and technical data to certain suggested legislative remedies, all dealt with exhaustively, it places its mass of facts in logical sequence and admirable detail.

One may perhaps be excused for regarding this work as the case for the prosecution, and for awaiting an equally studied defence, before committing ourselves to judgment. When this is done, humanity will doubtless be served.

It is stated in the preface that at the beginning of 1927 the White Lead Convention had been ratified by 13 countries : Austria, Belgium, Bulgaria, Chile, Czecho-Slovakia, Estonia, France, Greece, Latvia, Poland, Rumania, Spain, and Sweden. Ratification has been authorised in three countries—Hungary, Italy, and the Netherlands—and recommended in five—Argentina, Cuba, Denmark, Germany, and Uruguay. "In such circumstances an impartial survey of the facts cannot but be useful to countries which have already ratified, or are inclined to ratify, the Convention, while in other countries it may assist towards the creation of an informed and definite body of opinion."

* *White Lead.* Studies and Reports, Series F (Industrial Hygiene, No. 11). P. S. King & Son, Ltd., for the International Labour Office. League of Nations. Price 8s.

## THE LANDLORD AND TENANT (No. 2) BILL

THE Landlord and Tenant (No. 2) Bill passed the third reading on the 18th ult., great expedition having been shown in its last stages in the House of Commons. We are at the moment reviewing its provisions in these columns as considerable changes were effected in Committee. Since those articles were written some alterations have been made at the Report Stage, but these are not extensive, and we shall be able very briefly to indicate them after our next article has appeared so that a general idea may be gathered of the Bill as it stands.

It is rather significant in connection with legislation of this character that the first speaker on the Opposition side at the third reading debate should have characterised the Bill as "a very thin end of a sound wedge and they hoped that in the future this thin end having been inserted would be driven a good deal farther in," for restricting owners in the free use of their own property has proved before in connection with the Rent Restriction Acts a very dangerous experiment, which started from small beginnings but was "driven in" by Parliament until the wood into which it was driven commenced to split.

We agree with the observations made by certain speakers that the creation of special tribunals is to be deprecated, though Sir Henry Slessor may have overstated the case as regards the particular provisions of this Bill.

There appears considerable force in the observations addressed to the House by Sir P. Pilditch, that if the Bill were very largely used—that is, if it were operated in detail—and it became the custom to appeal to the tribunal on every occasion, the uncertainty about property which would arise would do away with the benefits of the Bill, but the decent landlord and tenant would be well advised not to resort to the machinery of the Bill but to use its terms as a basis for agreement. Complaint was made that the Bill contained no definition of "goodwill," but that is a term which is well understood, and negotiations are taking place every day between assignors and assignees of leases as to the value of the goodwill attaching to the premises. The Solicitor-General is reported as having said that he saw no great distinction in principle between goodwill by which a tenant added to the value of his building and the addition to the value of the building which had been made by a physical structure. We can understand that that might be said if the Bill, as we understood was to be the case when the proposed legislation was first outlined by the Attorney-General, had been limited to renewals of tenancies, but the Bill goes farther than this and states that a tenant "on quitting his holding" may claim compensation for goodwill if he proves that goodwill has attached to the premises. Now, what can be more shadowy than this, and how can it be compared with structural improvements? Goodwill attaches mainly to the person of the man carrying on business in the premises; and when he leaves he may take the goodwill with him and again set up and develop another business of the same kind in the neighbourhood, for there is no restrictive covenant as to trading within a particular area in this case. Some goodwill may attach to the premises for a time, but that will depend upon the way the premises may be used by a new tenant, and it in fact attaches more to the locality than to the premises. Thus, to take an example, there are large well-known stores in the West End which have been built up entirely by the enterprise shown by the firm who has created the business. Suppose the lease of these vast premises to have come to an end and that it is not to be renewed; not less than 12 months before the termination of the tenancy the claim for compensation for goodwill has to be made, and how is the value of the goodwill attaching to the premises to be determined? At that time the lessor may not know who the succeeding tenant will be or the use he will make of the premises. The lessee may not have determined or been able to determine where he can carry on his business or whether he will continue in business, and the actual value of the goodwill may not be, in fact, ascertainable for years. In such circumstances the tribunal has to consider "the intentions of the tenant as to carrying on the trade or business elsewhere." Intentions are proverbially slippery and may be changed and may land the tenant close to his old premises, when any goodwill would subsequently disappear. A much-needed amendment was made in the Bill on Report which covers the point we raised above as to goodwill attaching to locality, as Clause 4 (1) (*d*) now provides that the tribunal "shall disregard any value which is attributable exclusively to the situation of the premises."

We fail to see how the observation quoted above of the Solicitor-General can be justified unless the Bill be limited to compensation for goodwill on renewal of a tenancy. In such cases the value can be calculated nearly as accurately as physical alterations in the structure, but where the occupying tenant is leaving, the goodwill savours of the nature of the will-o'-the-wisp, and even a tribunal may fail to catch it.

### Coat-of-Arms for Fulham.

It is announced officially that Fulham is to have a coat-of-arms. The coat-of-arms will include representations of an ancient ship in token of Fulham having the longest river frontage of any borough in London, and a mitre to represent the association of Fulham with the Bishop of London.

### Kronborg Castle Restored.

Kronborg Castle, the legendary home of Hamlet, at Oeresund on the Sound, has been completely restored. Till a year ago the castle was used as military barracks, but now it has been brought back to its original form, and the Danish authorities propose to turn it into a museum, every detail of which shall give a picture of the time of its builder, King Fredrik II.

# THE INSTITUTE OF BUILDERS

## HALF-YEARLY MEETING.

Technical education for the building industry was discussed in the speeches which followed a luncheon at the Grand Hotel, Birmingham, on November 24, in connection with the half-yearly meeting of the Institute of Builders.

The President (Mr. S. Guy Sapcote, F.I.O.B.), who was in the chair, was supported among others by the Lord Mayor of Birmingham, Dr. P. D. Innes, M.A., D.Sc. (Director of Education, Birmingham), Councillor R. H. Hume, M.A. (Chairman of the Birmingham Evening Classes and Technical School Sub-Committee), Dr. R. E. Stradling, M.C., D.Sc., A.M.Inst.C.E. (Director of the Building Research Station, Garston), Dr. W. E. Sumpner, D.Sc. (Principal, Birmingham Central Technical College), Mr. Martin, S. Briggs, H.M.I., F.R.I.B.A., Mr. E. C. Bewlay, F.R.I.B.A. (President, Birmingham Architectural Association), Mr. Percy W. Cox (President, Birmingham Association of Building Trades Employers), Mr. R. A. Costain, F.I.O.B. (Vice-President), (Liverpool), Mr. J. Croad, F.I.O.B. (Gosport), Mr. J. H. B. Dixon, F.I.O.B. (Birmingham), Mr. W. W. Dove, F.I.O.B. (London), Alderman Alfred Dowling, J.P., F.I.O.B. (Bristol), Mr. G. Elvins, F.I.O.B. (Birmingham), Mr. G. A. Hewitt, F.I.O.B. (Leicester), Mr. F. G. Hodges, F.I.O.B. (Chairman, Midland Branch of the Institute) (Burton-on-Trent), Major Ralph J. Holliday, M.C., F.I.O.B. (Past-President) (London), Mr. W. Ivens, F.I.O.B. (Coventry), Mr. W. H. Jones, F.I.O.B. (Coventry), Mr. W. Kendrick, F.I.O.B. (Walsall), Mr. W. Moffat, F.I.O.B. (Birmingham), Mr. G. Anstee Perks, F.I.O.B. (Nottingham), Mr. John B. Whitehouse, F.I.O.B. (Birmingham).

The Chairman, in proposing the toast of "Our Guests," said that the Institute had identified itself with technical education practically ever since its foundation. This education for the building industry resolved itself broadly into two parts—education for the craftsman and education for the future administrative and master types. The more immediate concern of the Institute was with the latter type which, it was felt, had suffered neglect. Building was a team job. The Institute recognised the valuable educational work done by the Royal Institute of British Architects and by architectural classes, but they felt that in the interests of building the time had arrived for builders to take their rightful place and to shoulder their proper responsibilities in the matter of building education. He welcomed, too, Dr. Stradling. Building science was in its infancy. Very largely building to-day was still the result of the experience of trial and error methods of past generations. Modern conditions did not permit the risk and expense of full-scale experimentation. Such work had to be done in the laboratory, and it was essential that they as an Institute should see that full use was made of the result of Dr. Stradling's investigations. They wanted the master builder of the future to be scientifically trained and fully equipped with up-to-date knowledge of materials and construction as well as in those other important subjects to the builder, such as costing.

The Lord Mayor briefly responded.

The luncheon was followed by a lecture delivered by Dr. R. E. Stradling (Director of the Building Research Station of the Department of Scientific and Industrial Research). Mr. F. G. Hodges, F.I.O.B. (Chairman of the Midland Branch of the Institute), who took the chair, said, in introducing the lecturer, that it was of the greatest interest to the Institute that the work of the Building Research Station should permeate the industry. It would be to their interest to do their utmost to develop contact between the Institute and the Research Station.

Dr. R. E. Stradling, whose lecture was illustrated with slides, said the question was often asked, What was the use of building research or building science? If the best methods had not been developed over the thousands of years during which building had been practised, was it likely that by scientific work improvements could be made? Such queries arose from a lack of appreciation of the way in which the industry had developed its methods. In normal building work nearly the whole of the processes were traditional, handed down from father to son. This traditional knowledge was really a result of experimentation on the full scale. By trial and error over many years certain methods and materials were found to produce the result required in the particular construction and in the particular situation where the construction was to be erected. But the results of experimentation of this kind were only applicable when the conditions which were in operation when the trials were made were exactly reproduced. If any variation took place in those conditions, then the traditional result would not, in all probability, be reached.

The conditions of ancient construction could be considered under two headings: (1) the requirements demanded of the finished structure, and (2) the materials available for building. Builders at the present day would admit that both these sets of conditions had been changed in modern civilisation. The demands upon a finished structure were different from those made years ago; the materials available were widely different. Was it possible by laboratory experiments to elucidate the difficulties which had undoubtedly arisen in modern building due to the non-applicability of traditional methods in building to-day? He wanted to show by one or two examples that such assistance could be given by the application of scientific methods to the study of construction and materials.

WATER.—In considering the action of water on building materials it was convenient to divide the effects into two classes: (*a*) those which were due to water *as such* and (*b*) those which were due to water as a solvent bringing solutions into contact with building materials. Water could be present in building material in any of three ways: (1) in chemical combination, (2) as free water, (3) as sorbed water.

CHEMICAL COMBINATION.—Water was said to be chemically combined when it was so associated with some other substance as to form a different material from either of the two constituents. For example, if water was added to quicklime then slaked lime was formed. This slaked lime was a definite combination of water and quicklime—hydrated lime. An example of this in practice was given by a case of the spalling of a ridge tile on exposure to the weather. Moisture penetrated to a fragment of quicklime left in the tile after coming from the kiln. This caused the lime to slake and expand, forcing off the fragment. Here was an example of direct disintegration due to water combining with a certain constituent of a material.

Rain passing through the atmosphere of our towns dissolved those sulphur compounds formed during the burning of coal. The solution formed was either sulphuric or sulphurous acid. When this reached limestone it attacked it, forming calcium sulphate. The calcium sulphate crystallised in the pores of the stone when the weather was dry. The growth of the crystals exerted force enough to disrupt the stone.

FREE WATER.—Water was termed "free" when associated with a solid in such a way that its properties remained unchanged. One of the chief objections to the presence of free water was its power as a solvent. An example might show how important the presence of water might be in causing decay. It was the case of a brick wall which had been repointed. Instead of the repointing decaying as had the original pointing, the brickwork itself decayed. This was a quite common experience amongst those who had to deal with the maintenance of old buildings. The attempt to repoint with the most durable pointing had in very many cases resulted in the deterioration of the stonework or brickwork.

The effect of freezing also required examination from rather a different angle than usual. At the Research Station efforts had been made to measure the actual strain which occurred when water froze in the pores of the material.

SORBED WATER.—So far as building materials were concerned, "sorbed" water in association with the solid was in a condition intermediate between the chemically combined water and the free water referred to above. It was certainly held more firmly to the solid portion than was free water—for instance, the boiling point was higher and the freezing point lower than those of "free" water—but it was not held so strongly as to form a definite chemical compound. The point to realise was that the amount of water thus associated depends upon the external humidity conditions.

The state of matter in which a solid substance was associated with sorbed water was usually termed "colloidal." The name "gel" used in this connection came from gelatine, which was itself a typical gel. As was well known, gelatine swelled when placed in water and shrunk when dried. Another example was catgut, used in so many forms of hygrometer—for example, the old-fashioned weather gauge, consisting of two figures, a man and a woman.

As with the catgut of the old weather gauge, so with many building materials, a constant adjustment was taking place, tending to bring about equilibrium between the moisture content of the air and that of the solid, and accompanying this change of moisture content of the solid there was a change in size. The water associated in this way with the solid matter was what was termed "sorbed" water. Timber furnished an example well known to every builder; it swelled when it absorbed water, shrunk when it dried, and was weaker when it was wet than when dry. It was not always realised that similar properties were possessed by other materials. An example of great practical importance was provided by cement and concrete; for correct handling, an intimate knowledge of these moisture movements was necessary. Crazing, shrinkage cracks, etc., and the consequent rusting of reinforcement were generally due originally to those moisture changes.

CONCLUSIONS.—In the case of concrete, one had quite a good example of the attempt to apply traditional methods to a new material. The old form of concrete in use many years ago was almost entirely mass work. With the advent of reinforced concrete, the building craftsmen had no traditional experiments to fall back upon apart from that old type of construction. In the heavy mass work moisture movements were not of importance, but with the material as now used in much lighter sections and associated with steel, those moisture movements became of serious import.

Those subjects were all being studied at the research station. How was the information to become part of the working knowledge of the building industry? It seemed to him that this could only be done by very much greater emphasis on the scientific side of the education of entrants into the building industry. The Institute had had under consideration for some time the question of the establishment of University work, and he wished to appeal for full-hearted support to this movement of their own organisation. He trusted that the Institute would be successful in establishing at least one Chair of Building Science, and that that chair would be of the right type to form a model for future ones.

A vote of thanks to the lecturer, proposed by the chairman, and seconded by Major R. J. Holliday, concluded the proceedings.

# RATES OF WAGES IN THE BUILDING TRADE

**[Every endeavour is made to ensure accuracy but we cannot be responsible for errors.]**

| | Masons | Brick-layers. | Car-penters Joiners | Plas-terers. | Slaters. | Plum-bers. | Pain-ters. | Lab-ourers. |
|---|---|---|---|---|---|---|---|---|
| Aberdare | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/3½ |
| Accrington | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/3½ |
| Alfreton | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/3½ |
| Alnwick | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/3½ |
| Altrincham | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/3½ |
| Ashford (Kent) | 1/4½ | 1/4½ | 1/4½ | 1/4½ | 1/4½ | 1/4½ | 1/4½ | 1/0½ |
| Ashington | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/3½ |
| Ashton-under-Lyne | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/3½ |
| Aylesbury | 1/4½ | 1/4½ | 1/4½ | 1/4½ | 1/4½ | 1/4½ | 1/4½ | 1/0½ |
| Aylsham | 1/4½ | 1/4½ | 1/4½ | 1/4½ | 1/4½ | 1/4½ | 1/4½ | 1/0½ |
| Banbury | 1/4½ | 1/4½ | 1/4½ | 1/4½ | 1/4½ | 1/4½ | 1/4½ | 1/0½ |
| Barnsley | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/3½ |
| Barnstaple | 1/5½ | 1/5½ | 1/5½ | 1/5½ | 1/5½ | 1/5½ | 1/5½ | 1/1½ |
| Barrow-in-Furness | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/3½ |
| Barry | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/3½ |
| Basingstoke | 1/4½ | 1/4½ | 1/4½ | 1/4½ | 1/4½ | 1/4½ | 1/4½ | 1/0½ |
| Bath | 1/6 | 1/6 | 1/6 | 1/6 | 1/6 | 1/6 | 1/6 | 1/1½ |
| Bedford | 1/6 | 1/6 | 1/6 | 1/6 | 1/6 | 1/6 | 1/6 | 1/1½ |
| Berwick | 1/7 | 1/7 | 1/7 | 1/7 | 1/7 | 1/7 | 1/7 | 1/2½ |
| Bexhill | 1/5 | 1/5 | 1/5 | 1/5 | 1/5 | 1/5 | 1/5 | 1/1 |
| Birkenhead | 1/10 | 1/10 | 1/10 | 1/11 | 1/10 | 1/10 | 1/9½ | 1/4½ |
| Birmingham | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/3½ |
| Bishop Auckland | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/3½ |
| Blackburn | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/3½ |
| Blackpool | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/3½ |
| Bolton | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/3½ |
| Bournemouth | 1/6 | 1/6 | 1/6 | 1/6 | 1/6 | 1/6 | 1/6 | 1/1½ |
| Bradford | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/3½ |
| Bradford-on-Avon | 1/4½ | 1/4½ | 1/4½ | 1/4½ | 1/4½ | 1/4½ | 1/3½ | 1/0½ |
| Braintree | 1/5½ | 1/5½ | 1/5½ | 1/5½ | 1/5½ | 1/5½ | 1/5½ | 1/1½ |
| Brentwood | 1/7 | 1/7 | 1/7 | 1/7 | 1/7 | 1/7 | 1/7 | 1/2½ |
| Bridgwater | 1/5 | 1/5 | 1/5 | 1/5 | 1/5 | 1/5 | 1/5 | 1/1 |
| Bridlington | 1/7½ | 1/7½ | 1/7½ | 1/7½ | 1/7½ | 1/7½ | 1/7½ | 1/2½ |
| Brighton | 1/6 | 1/6 | 1/6 | 1/6 | 1/6 | 1/6 | 1/6 | 1/1½ |
| Bristol | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/3½ |
| Bromsgrove | 1/7 | 1/7 | 1/7 | 1/7 | 1/7 | 1/7 | 1/7 | 1/2½ |
| Bromyard | 1/4 | 1/4 | 1/4 | 1/4 | 1/4 | 1/4 | 1/4 | 1/0½ |
| Bungay | 1/3½ | 1/3½ | 1/3½ | 1/3½ | 1/3½ | 1/3½ | 1/3½ | 11½ |
| Burnley | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/3½ |
| Burton-on-Trent | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/3½ |
| Bury | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/3½ |
| Buxton | 1/6½ | 1/6½ | 1/6½ | 1/6½ | 1/6½ | 1/6½ | 1/6½ | 1/2 |
| Cambridge | 1/6 | 1/6 | 1/6 | 1/6 | 1/6 | 1/6 | 1/6 | 1/1½ |
| Canterbury | 1/4½ | 1/4½ | 1/4½ | 1/4½ | 1/4½ | 1/4½ | 1/4½ | 1/0½ |
| Cardiff | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/3½ |
| Carlisle | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/3½ |
| Chatham | 1/5½ | 1/5½ | 1/5½ | 1/5½ | 1/5½ | 1/5½ | 1/5½ | 1/1½ |
| Chelmsford | 1/5½ | 1/5½ | 1/5½ | 1/5½ | 1/5½ | 1/5½ | 1/5½ | 1/1½ |
| Cheltenham | 1/6½ | 1/6½ | 1/6½ | 1/6½ | 1/6½ | 1/6½ | 1/6½ | 1/2 |
| Chester | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/3½ |
| Chesterfield | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/3½ |
| Chorley | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/3½ |
| Cirencester | 1/5 | 1/5 | 1/5 | 1/5 | 1/5 | 1/5 | 1/4 | 1/1 |
| Clacton | 1/5½ | 1/5½ | 1/5½ | 1/5½ | 1/5½ | 1/5½ | 1/5½ | 1/1½ |
| Colchester | 1/5½ | 1/5½ | 1/5½ | 1/5½ | 1/5½ | 1/5½ | 1/5½ | 1/1½ |
| Coventry | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/3½ |
| Cranbrook | 1/3½ | 1/3½ | 1/3½ | 1/3½ | 1/3½ | 1/3½ | 1/3½ | 11½ |
| Crewe | 1/6½ | 1/6½ | 1/6½ | 1/6½ | 1/6½ | 1/6½ | 1/6½ | 1/2 |
| Cromer | 1/4½ | 1/4½ | 1/4½ | 1/4½ | 1/4½ | 1/4½ | 1/4½ | 1/0½ |
| Darlington | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/3½ |
| Deal | 1/4½ | 1/4½ | 1/4½ | 1/4½ | 1/4½ | 1/4½ | 1/4½ | 1/0½ |
| Denbigh | 1/6½ | 1/6½ | 1/6½ | 1/6½ | 1/6½ | 1/6½ | 1/6½ | 1/2 |
| Derby | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/3½ |
| Devizes | 1/4½ | 1/4½ | 1/4½ | 1/4½ | 1/4½ | 1/4½ | 1/3½ | 1/0½ |
| Dewsbury | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/3½ |
| Doncaster | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/3½ |
| Dorchester | 1/4½ | 1/4½ | 1/4½ | 1/4½ | 1/4½ | 1/4½ | 1/3½ | 1/0½ |
| Dorking | 1/5½ | 1/5½ | 1/5½ | 1/5½ | 1/5½ | 1/5½ | 1/5½ | 1/1½ |
| Dovercourt | 1/5 | 1/5 | 1/5 | 1/5 | 1/5 | 1/5 | 1/5 | 1/1 |
| Driffield | 1/6½ | 1/6½ | 1/6½ | 1/6½ | 1/6½ | 1/6½ | 1/6½ | 1/2 |
| Droitwich | 1/6½ | 1/6½ | 1/5½ | 1/6½ | 1/6½ | 1/6½ | 1/6½ | 1/2 |
| Dudley | 1/7½ | 1/7½ | 1/7½ | 1/7½ | 1/7½ | 1/7½ | 1/7½ | 1/2½ |
| Durham | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/3½ |
| Eastbourne | 1/6 | 1/6 | 1/6 | 1/6 | 1/6 | 1/6 | 1/6 | 1/1½ |
| E. Glam. (Mon. Val.) | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/3½ |
| Ely | 1/4½ | 1/4½ | 1/4½ | 1/4½ | 1/4½ | 1/4½ | 1/4½ | 1/0½ |
| Exeter | 1/7 | 1/7 | 1/7 | 1/7 | 1/7 | 1/7 | 1/6 | 1/2½ |
| Exmouth | 1/5 | 1/5 | 1/5 | 1/5 | 1/5 | 1/5 | 1/5 | 1/1 |
| Fakenham | 1/4½ | 1/4½ | 1/4½ | 1/4½ | 1/4½ | 1/4½ | 1/4½ | 1/0½ |
| Felixstowe | 1/6 | 1/6 | 1/6 | 1/6 | 1/6 | 1/6 | 1/6 | 1/1½ |
| Folkestone | 1/5 | 1/5 | 1/5 | 1/5 | 1/5 | 1/5 | 1/5 | 1/1 |
| Frome | 1/4½ | 1/4½ | 1/4½ | 1/4½ | 1/4½ | 1/4½ | 1/3½ | 1/0½ |
| Glossop | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/2½ |
| Gloucester | 1/6½ | 1/6½ | 1/6½ | 1/6½ | 1/6½ | 1/6½ | 1/5½ | 1/2 |
| Godalming | 1/5 | 1/5 | 1/5 | 1/5 | 1/5 | 1/5 | 1/5 | 1/1 |
| Goole | 1/7 | 1/7 | 1/7 | 1/7 | 1/7 | 1/7 | 1/7 | 1/2½ |
| Gosport | 1/6 | 1/6 | 1/6 | 1/6 | 1/6 | 1/6 | 1/6 | 1/1½ |
| Grantham | 1/6½ | 1/6½ | 1/6½ | 1/6½ | 1/6½ | 1/6½ | 1/6½ | 1/2 |
| Great Yarmouth | 1/5½ | 1/5½ | 1/5½ | 1/5½ | 1/5½ | 1/5½ | 1/5½ | 1/1½ |
| Grimsby | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/3½ |
| Guildford | 1/5½ | 1/5½ | 1/5½ | 1/5½ | 1/5½ | 1/5½ | 1/5½ | 1/1½ |
| Halifax | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/3½ |
| Harpenden | 1/5½ | 1/5½ | 1/5½ | 1/5½ | 1/5½ | 1/5½ | 1/5½ | 1/1½ |
| Harrogate | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/3½ |
| Hartlepools | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/3½ |
| Harwich | 1/5 | 1/5 | 1/5 | 1/5 | 1/5 | 1/5 | 1/5 | 1/1 |
| Hastings | 1/4½ | 1/4½ | 1/4½ | 1/4½ | 1/4½ | 1/4½ | 1/4½ | 1/0½ |
| Hatfield | 1/5½ | 1/5½ | 1/5½ | 1/5½ | 1/5½ | 1/5½ | 1/5½ | 1/1½ |
| Hednesford | 1/7 | 1/7 | 1/7 | 1/7 | 1/7 | 1/7 | 1/7 | 1/2½ |
| Hereford | 1/6 | 1/6 | 1/6 | 1/6 | 1/6 | 1/6 | 1/5 | 1/1½ |
| Herne Bay | 1/4½ | 1/4½ | 1/4½ | 1/4½ | 1/4½ | 1/4½ | 1/4½ | 1/0½ |
| Hertford | 1/5½ | 1/5½ | 1/5½ | 1/5½ | 1/5½ | 1/5½ | 1/5½ | 1/1½ |
| Hitchin | 1/5½ | 1/5½ | 1/5½ | 1/5½ | 1/5½ | 1/5½ | 1/5½ | 1/1½ |
| Hoddesdon | 1/5½ | 1/5½ | 1/5½ | 1/5½ | 1/5½ | 1/5½ | 1/5½ | 1/1½ |
| Holt | 1/3½ | 1/3½ | 1/3½ | 1/3½ | 1/3½ | 1/3½ | 1/3½ | 11½ |
| Huddersfield | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/3½ |
| Hull | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/3½ |
| Hunstanton | 1/4½ | 1/4½ | 1/4½ | 1/4½ | 1/4½ | 1/4½ | 1/4½ | 1/0½ |
| Huntingdon | 1/5 | 1/5 | 1/5 | 1/5 | 1/5 | 1/5 | 1/5 | 1/1 |
| Isle of Wight | 1/4 | 1/4 | 1/4 | 1/4 | 1/4 | 1/4 | 1/4 | 1/0½ |
| Ipswich | 1/6 | 1/6 | 1/6 | 1/6 | 1/6 | 1/6 | 1/6 | 1/1½ |
| Keighley | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/3½ |
| Kettering | 1/6 | 1/6 | 1/6 | 1/6 | 1/6 | 1/6 | 1/6 | 1/1½ |
| Kidderminster | 1/7 | 1/7 | 1/7 | 1/7 | 1/7 | 1/7 | 1/7 | 1/2½ |
| King's Lynn | 1/5 | 1/5 | 1/5 | 1/5 | 1/5 | 1/5 | 1/5 | 1/1 |
| Lancaster | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/3½ |
| Leamington Spa | 1/7 | 1/7 | 1/7 | 1/7 | 1/7 | 1/7 | 1/7 | 1/2½ |

| | Masons | Brick-layers. | Car-penters Joiners | Plas-terers. | Slaters | Plum-bers. | Pain-ters. | Lab-ourers. |
|---|---|---|---|---|---|---|---|---|
| Leeds | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/3½ |
| Leicester | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/3½ |
| Leighton Buzzard | 1/4½ | 1/4½ | 1/4½ | 1/4½ | 1/4½ | 1/4½ | 1/4½ | 1/0½ |
| Lichfield | 1/6½ | 1/6½ | 1/6½ | 1/6½ | 1/6½ | 1/6½ | 1/6½ | 1/2 |
| Lincoln | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/3½ |
| Littlehampton | 1/5 | 1/5 | 1/5 | 1/5 | 1/5 | 1/5 | 1/5 | 1/1 |
| Liverpool | 1/10 | 1/10 | 1/10 | 1/11 | 1/10 | 1/10 | 1/9½ | 1/4½ |
| Llandudno | 1/6½ | 1/6½ | 1/6½ | 1/6½ | 1/6½ | 1/6½ | 1/6½ | 1/2 |
| Llanelly | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/3½ |
| London: | | | | | | | | |
| 12 m. radius | 1/9½ | 1/9½ | 1/9½ | 1/9½ | 1/9½ | 1/9½ | 1/8½ | 1/4½ |
| 12–15 m. radius | 1/9 | 1/9 | 1/9 | 1/9 | 1/9 | 1/9 | 1/8 | 1/4 |
| Loughborough | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/3½ |
| Lowestoft | 1/5½ | 1/5½ | 1/5½ | 1/5½ | 1/5½ | 1/5½ | 1/5½ | 1/1½ |
| Luton | 1/6 | 1/6 | 1/6 | 1/6 | 1/6 | 1/6 | 1/6 | 1/1½ |
| Macclesfield | 1/7½ | 1/7½ | 1/7½ | 1/7½ | 1/7½ | 1/7½ | 1/7½ | 1/2½ |
| Maidstone | 1/5½ | 1/5½ | 1/5½ | 1/5½ | 1/5½ | 1/5½ | 1/5½ | 1/1½ |
| Malvern | 1/6½ | 1/6½ | 1/6½ | 1/6½ | 1/6½ | 1/6½ | 1/6½ | 1/2½ |
| Manchester | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/3½ |
| Mansfield | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/3 |
| Margate | 1/4½ | 1/4½ | 1/4½ | 1/4½ | 1/4½ | 1/4½ | 1/4½ | 1/0 |
| Market Harb'rough | 1/6½ | 1/6½ | 1/6½ | 1/6½ | 1/6½ | 1/6½ | 1/6½ | 1/2 |
| Matlock | 1/6½ | 1/6½ | 1/6½ | 1/6½ | 1/6½ | 1/6½ | 1/6½ | 1/2½ |
| Melton Constable | 1/3½ | 1/3½ | 1/3½ | 1/3½ | 1/3½ | 1/3½ | 1/3½ | 11½ |
| Melton Mowbray | 1/7 | 1/7 | 1/7 | 1/7 | 1/7 | 1/7 | 1/7 | 1/2½ |
| Merthyr Tydfil | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/3½ |
| Middlesbrough | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/3½ |
| Newark | 1/6½ | 1/6½ | 1/6½ | 1/6½ | 1/6½ | 1/6½ | 1/6½ | 1/2 |
| Newbury | 1/4½ | 1/4½ | 1/4½ | 1/4½ | 1/4½ | 1/4½ | 1/4½ | 1/0½ |
| Newcastle-on-Tyne | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/3½ |
| Newcastle-ur-Lyme | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/3½ |
| New Forest | 1/5 | 1/5 | 1/5 | 1/5 | 1/5 | 1/5 | 1/5 | 1/1 |
| Newmarket | 1/5 | 1/5 | 1/5 | 1/5 | 1/5 | 1/5 | 1/5 | 1/1 |
| Newport, Mon. | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/3½ |
| Northampton | 1/7 | 1/7 | 1/7 | 1/7 | 1/7 | 1/7 | 1/7 | 1/2½ |
| Norwich | 1/7 | 1/7 | 1/7 | 1/7 | 1/7 | 1/7 | 1/7 | 1/2½ |
| Nottingham | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/3 |
| Nuneaton | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/3½ |
| Oakham | 1/5½ | 1/5½ | 1/5½ | 1/5½ | 1/5½ | 1/5½ | 1/5½ | 1/1½ |
| Oldham | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/3½ |
| Oxford | 1/6 | 1/6 | 1/6 | 1/6 | 1/6 | 1/6 | 1/6 | 1/1½ |
| Paignton | 1/7 | 1/7 | 1/7 | 1/7 | 1/7 | 1/7 | 1/7 | 1/2½ |
| Peterborough | 1/6½ | 1/6½ | 1/6½ | 1/6½ | 1/6½ | 1/6½ | 1/6½ | 1/2 |
| Plymouth | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/7 | 1/3½ |
| Pontypridd | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/3½ |
| Portsmouth | 1/6 | 1/6 | 1/6 | 1/6 | 1/6 | 1/6 | 1/6 | 1/1½ |
| Preston | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/3½ |
| Ramsgate | 1/4½ | 1/4½ | 1/4½ | 1/4½ | 1/4½ | 1/4½ | 1/4½ | 1/0½ |
| Reading | 1/6 | 1/6 | 1/6 | 1/6 | 1/6 | 1/6 | 1/6 | 1/1½ |
| Redcar | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/3½ |
| Redditch | 1/7 | 1/7 | 1/7 | 1/7 | 1/7 | 1/7 | 1/7 | 1/2 |
| Reigate | 1/5½ | 1/5½ | 1/5½ | 1/5½ | 1/5½ | 1/5½ | 1/5½ | 1/1½ |
| Retford | 1/6½ | 1/6½ | 1/6½ | 1/6½ | 1/6½ | 1/6½ | 1/6½ | 1/2½ |
| Ripon | 1/6½ | 1/6½ | 1/6½ | 1/6½ | 1/6½ | 1/6½ | 1/6½ | 1/2 |
| Rochdale | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/3 |
| Rochester | 1/5½ | 1/5½ | 1/5½ | 1/5½ | 1/5½ | 1/5½ | 1/5½ | 1/1½ |
| Rugby | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/3½ |
| Saffron Walden | 1/3½ | 1/3½ | 1/3½ | 1/3½ | 1/3½ | 1/3½ | 1/3½ | 11½ |
| St. Albans | 1/6½ | 1/6½ | 1/6½ | 1/6½ | 1/6½ | 1/6½ | 1/6½ | 1/2½ |
| St. Helens | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/3½ |
| Sawbridgeworth | 1/5½ | 1/5½ | 1/5½ | 1/5½ | 1/5½ | 1/5½ | 1/5½ | 1/1½ |
| Saxmundham | 1/4 | 1/4 | 1/4 | 1/4 | 1/4 | 1/4 | 1/4 | 1/0½ |
| Scarborough | 1/7½ | 1/7½ | 1/7½ | 1/7½ | 1/7½ | 1/7½ | 1/7½ | 1/2½ |
| Sevenoaks | 1/5½ | 1/5½ | 1/5½ | 1/5½ | 1/5½ | 1/5½ | 1/5½ | 1/1½ |
| Sheffield | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/3½ |
| Shrewsbury | 1/6½ | 1/6½ | 1/6½ | 1/6½ | 1/6½ | 1/6½ | 1/6½ | 1/2 |
| Sittingbourne | 1/4½ | 1/4½ | 1/4½ | 1/4½ | 1/4½ | 1/4½ | 1/4½ | 1/0½ |
| Southampton | 1/6½ | 1/6½ | 1/6½ | 1/6½ | 1/6½ | 1/6½ | 1/6½ | 1/2 |
| Southend-on-Sea | 1/5½ | 1/5½ | 1/5½ | 1/5½ | 1/5½ | 1/5½ | 1/5½ | 1/1½ |
| Southport | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/3½ |
| South Shields | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/3½ |
| Stevenage | 1/5½ | 1/5½ | 1/5½ | 1/5½ | 1/5½ | 1/5½ | 1/5½ | 1/1½ |
| Stockport | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/3½ |
| Stockton-on-Tees | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/3½ |
| Stoke-on-Trent | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/3½ |
| Stourbridge | 1/7 | 1/7 | 1/7 | 1/7 | 1/7 | 1/7 | 1/7 | 1/2½ |
| Stourport | 1/7 | 1/7 | 1/7 | 1/7 | 1/7 | 1/7 | 1/7 | 1/2½ |
| Stowmarket | 1/4½ | 1/4½ | 1/4½ | 1/4½ | 1/4½ | 1/4½ | 1/4½ | 1/0½ |
| Stratford-on-Avon | 1/6½ | 1/6½ | 1/6½ | 1/6½ | 1/6½ | 1/6½ | 1/6½ | 1/2 |
| Stroud | 1/5½ | 1/5½ | 1/5½ | 1/5½ | 1/5½ | 1/5½ | 1/5 | 1/1½ |
| Sunderland | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/3½ |
| Swaffham | 1/3½ | 1/3½ | 1/3½ | 1/3½ | 1/3½ | 1/3½ | 1/3½ | 11½ |
| Swansea | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/3½ |
| Swindon | 1/6 | 1/6 | 1/6 | 1/6 | 1/6 | 1/6 | 1/5 | 1/1½ |
| Tamworth | 1/7½ | 1/7½ | 1/7½ | 1/7½ | 1/7½ | 1/7½ | 1/7½ | 1/2½ |
| Taunton | 1/5½ | 1/5½ | 1/5½ | 1/5½ | 1/5½ | 1/5½ | 1/5½ | 1/1½ |
| Thetford | 1/4½ | 1/4½ | 1/4½ | 1/4½ | 1/4½ | 1/4½ | 1/4½ | 1/0½ |
| Torquay | 1/7 | 1/7 | 1/7 | 1/7 | 1/7 | 1/7 | 1/7 | 1/2½ |
| Totnes | 1/5 | 1/5 | 1/5 | 1/5 | 1/5 | 1/5 | 1/4½ | 1/1 |
| Trowbridge | 1/4½ | 1/4½ | 1/4½ | 1/4½ | 1/4½ | 1/4½ | 1/3½ | 1/0½ |
| Tunbridge Wells | 1/5½ | 1/5½ | 1/5½ | 1/5½ | 1/5½ | 1/5½ | 1/5½ | 1/1½ |
| Uttoxeter | 1/5½ | 1/5½ | 1/5½ | 1/5½ | 1/5½ | 1/5½ | 1/5½ | 1/1½ |
| Wakefield | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/3½ |
| Walsall | 1/7½ | 1/7½ | 1/7½ | 1/7½ | 1/7½ | 1/7½ | 1/7½ | 1/2½ |
| Wallsend | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/3½ |
| Warminster | 1/4½ | 1/4½ | 1/4½ | 1/4½ | 1/4½ | 1/4½ | 1/3½ | 1/0½ |
| Warrington | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/3½ |
| Warwick | 1/7 | 1/7 | 1/7 | 1/7 | 1/7 | 1/7 | 1/7 | 1/2½ |
| Wells (Norfolk) | 1/3½ | 1/3½ | 1/3½ | 1/3½ | 1/3½ | 1/3½ | 1/3½ | 11½ |
| Welwyn. Gar. City | 1/6½ | 1/6½ | 1/6½ | 1/6½ | 1/6½ | 1/6½ | 1/6½ | 1/2 |
| West Bromwich | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/3½ |
| Weston-sup.-Mare | 1/6 | 1/6 | 1/6 | 1/6 | 1/6 | 1/6 | 1/6 | 1/1½ |
| Weymouth | 1/5 | 1/5 | 1/5 | 1/5 | 1/5 | 1/5 | 1/4 | 1/1 |
| Whitby | 1/7 | 1/7 | 1/7 | 1/7 | 1/7 | 1/7 | 1/7 | 1/2 |
| Wigan | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/3 |
| Winchester | 1/5 | 1/5 | 1/5 | 1/5 | 1/5 | 1/5 | 1/5 | 1/1 |
| Windsor | 1/6 | 1/6 | 1/6 | 1/6 | 1/6 | 1/6 | 1/6 | 1/1 |
| Wisbech | 1/4½ | 1/4½ | 1/4½ | 1/4½ | 1/4½ | 1/4½ | 1/4½ | 1/0½ |
| Wolverhampton | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/3½ |
| Woodbridge | 1/4½ | 1/4½ | 1/4½ | 1/4½ | 1/4½ | 1/4½ | 1/4½ | 1/0½ |
| Worcester | 1/6½ | 1/6½ | 1/6½ | 1/6½ | 1/6½ | 1/6½ | 1/6½ | 1/2½ |
| Worksop | 1/6½ | 1/6½ | 1/6½ | 1/6½ | 1/6½ | 1/6½ | 1/6½ | 1/2½ |
| Worthing | 1/5 | 1/5 | 1/5 | 1/5 | 1/5 | 1/5 | 1/5 | 1/1½ |
| Wrexham | 1/7½ | 1/7½ | 1/7½ | 1/7½ | 1/7½ | 1/7½ | 1/7½ | 1/2½ |
| Wroxham | 1/3½ | 1/3½ | 1/3½ | 1/3½ | 1/3½ | 1/3½ | 1/3½ | 11½ |
| Wymondham | 1/4 | 1/4 | 1/4 | 1/4 | 1/4 | 1/4 | 1/4 | 1/0½ |
| York | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/3½ |

For rates of wages in the Building Trade in Scotland see page 882.)

# CONTRACTS, COMPETITIONS, &c.

**For some contracts still open, but not included in this List, see previous issues. Those with an asterisk are advertised in this number. Certain conditions beyond those given in the following information are imposed in some cases, such as that advertisers do not bind themselves to accept the lowest or any tender; that a fair wages clause shall be observed, that no allowance will be made for tenders; and that deposits are returned on receipt of a bona-fide tender unless stated to the contrary.**

***The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in; the name and address at the end is the person from whom or place where quantities, forms of tender, etc., may be obtained.***

**Following is a list of abbreviations:—Borough Surveyor, B.S.; Borough Engineer, B.E.; District Surveyor, D.S.; Clerk, C.; Town Clerk, T.C.; County Engineer, C.E.; County Surveyor, C.S.; County Architect, C.A.; Surveyor, S.; Engineer, E.; Borough Architect, B.A.; Architect, A.**

## BUILDING, PAINTING, ELECTRIC LIGHTING, HEATING ETC.

Dec. 5.—**Cowbridge.**—Improvements.—For (1) new boundary wall fence to the housing site at Llantwit Major; (2) alterations to the existing boundary fencing at Llysworney and Llandow housing sites; (3) electric lighting installation at council offices, Cowbridge; (4) outside painting work to 50 houses at Llanharan, for R.D.C. V. S. Gwyn, C., 79, East-gate-st.

Dec. 5.—**Denbigh.**—Dwellings.—10 workmen's dwellings and road and sewers on Lon Llewelyn site, for T.C. M. E. Morris, Sanitary Inspector. Dep. £2 2s.

Dec. 5.—**Falmouth.**—Painting.—Also colouring, etc., at various schools, for Penryn and Falmouth District E.C. M. A. Cann, District Clerk.

Dec. 5.—**Heanor.**—Houses.—10 parlour type in Hollywell-av., Codnor, and 12 non-parlour, in blocks of four, at West Hill, Codnor, for U.D.C. R. Archer, housing architect. Dep. £1 1s.

Dec. 5.—**Hendon.**—Conveniences.—Four public conveniences in Hendon Park, Mill Hill Park, the Hyde Playing Fields, and Princes Park Recreation ground, for U.D.C. A. O. Knight, E. and S. Dep. £5 5s.

Dec. 5.—**Leek.**—Houses.—110 in Station-st. and Morley-st., for U.D.C. W. E. Beacham, S.

Dec. 5.—**London.**—Alterations and Additions.—To the Upton Cross School, Plashet-rd., Plaistow, for the West Ham Education Committee. John H. Jacques, L.R.I.B.A., Architect to the Committee, 61, West Ham-la., Stratford, E.15. Dep. £2.

Dec. 5.—**Shipley.**—Installation.—Of electric lighting, at Shipley Salt schools, for West Riding E.C. Education Department, County Hall, Wakefield.

Dec. 6.—**Belfast.**—Reinforced Concrete Reservoir, etc.—Construction of, at New Parliament Building, for H.M.O.W. W. H. Stephens and Sons, 13, Donegal-sq. North, Belfast. Contracts Branch, King Charles-st., S.W.1. Dep. £1 1s. (Cheques payable to the Commissioners.)

Dec. 6.—**Bramhope.**—Alterations.—To conveniences at Council school, for West Riding E.C. Education Department, County Hall, Wakefield.

Dec. 6.—**Carmarthen.**—Houses.—For (a) levelling, paving, metalling and kerbing of about 560 ft. lin. of roads and the laying of water-mains; (b) 28 non-parlour type houses; (c) 16 parlour type houses; (d) 6 pairs of flats on Pentrefelin housing estate, for C.B. G. L. Ovens, B.E. and S. Dep. £5.

Dec. 6.—**Clitheroe.**—Additions.—Also additions to Sawley (Clitheroe) Council school, for West Riding E.C. Education Department, County Hall, Wakefield.

Dec. 6.—**Glamorgan.**—Improvements.—For (1) Gorseinon Council school, extension of cloakroom of girls' department; (2) Bridgend New Blind school, electric lighting and electric bells, etc.; (3) Penceed Council school, electric lighting; (4) Nelson Council school, combined domestic science and handicraft centre; (5) Tynewydd Council school, new cloakroom, for C.C. T. Mansel Franklen, Secretary to E.C., Glamorgan County Hall, Cardiff.

Dec. 6.—**Godstone.**—Repairs.—General repairs to six Council houses at Tatsfield, for R.D.C. S.

Dec. 6.—**Hemsworth.**—Installation.—Of electric light to new school and caretaker's house, Fourlane-ends, for West Riding E.C. Education Department, County Hall, Wakefield.

Dec. 6.—**North Berwick.**—Offices.—Shelter and offices at corner of Quality-st. and Melbourne-place, for T.C. A. Robertson, B.S. Dep. £1.

Dec. 6.—**Rochester.**—Alterations.—Sundry alterations in formation of new mortuary, pathological laboratory, etc., at St. Bartholomew's Hospital, Rochester. Stoner & Sons, Quantity Surveyors, Boston House, 63/4, New Broad-street, London, E.C.1. Dep. £2 2s.

Dec. 6.—**Saddleworth.**—Installation.—Alterations and extension of low pressure hot water installation at Saddleworth Uppermill Council School, for West Riding E.C. Education Department, County Hall, Wakefield.

Dec. 6.—**South Kirkby.**—Installation.—Of low pressure hot water at South Kirkby New School, for West Riding E.C. Education Department, County Hall, Wakefield.

Dec. 7.—**Greenwich.**—Maternity and Child Welfare Centre.—Erection of, on a portion of land known as the Greenwich Hospital Cemetery, Woolwich-rd., Greenwich, for the Greenwich Borough Council. Borough Engineer and Surveyor's Office, Town Hall, Greenwich. Dep. £3 3s.

Dec. 7.—**Leeds.**—Alterations.—At Cookridge-st. baths, for T.C. W. T. Lancashire, City E.

Dec. 7.—**Loanhead.**—Houses.—40, as an extension of existing scheme in Kennington-av., for T.C. Geo. B. Deas, architect, Central-chambers, Kirkcaldy. Dep. £1.

Dec. 7.—**Meriden.**—Houses.—6 parlour houses and 6 non-parlour houses at Hampton-in-Arden, for R.D.C. H. Pickering, S. Dep. £2 2s.

Dec. 7.—**Parkhurst (I. of W.).**—Fence.—Galvanised iron fence at infirmary, Parkhurst, for Isle of Wight B.G. Master at the Poor Law Institution.

Dec. 7.—**Warblington.**—Wall.—Concrete retaining wall along bank of tidal pond in Bath-rd., Emsworth, for U.D.C. F. Heath, surveyor.

Dec. 8.—**Dewsbury.**—Extensions.—To existing retort house, for C.B. Borough Gas Engineer and Manager.

Dec. 8.—**Gilfach Goch.**—Chapel.—At Garden Village, for Primitive Methodists. Rev. F. S. Collison, 28, Tylcha Wes-cres., Tonyrefail. Dep. £2 2s.

Dec. 8.—**Harrow-on-the-Hill.**—Additions.—For (a) additions to ward block, Isolation hospital; and (b) erection of pavilion, West Harrow recreation ground, for U.D.C. J. P. Bennetts, E. and S.

Dec. 9.—**Blackburn.**—Painting.—St. Luke's school, for Corporation. H. M. Webb, Borough and Water Engineer.

Dec. 9.—**East Croydon.**—Extension.—Also alteration of low-pressure hot water heating at sorting office, for H.M.O.W. H.M. Office of Works, King Charles-st., S.W.1. Dep. £1 1s.

Dec. 9.—**Kensington.**—Infant Welfare Centre and Flats. Erection of for B.C. Horace Rapson, T.C., Town Hall. Dep. £2 2s.

Dec. 9.—**Liverpool.**—Roofing.—Steel-framed roofing for storage shed at Pumpfields sub-station, Vauxhall-rd., for T.C. Land Steward and Surveyor.

Dec. 10.—**Durham.**—Schools.—Erection of, at Brandon Colliery and Usworth Colliery, for the C.C. F. Willey, F.R.I.B.A., 34, Old Elvet, Durham.

★Dec. 10.—**Purley.**—Shelter.—Erection of, for the U.D.C. The Clerk, Coulsdon and Purley U.D.C., Council Offices, Purley. Dep. £1 1s.

Dec. 10.—**Sheffield.**—School.—New Council school at Abbey-lane, Woolseats, for T.C. W. Geo. Davies, F.R.I.B.A. City A. Dep. £2.

Dec. 10.—**Stockport.**—Extension.—To coal gas purification plant, comprising foundations, building, purifier boxes, roof, oxide elevators, conveyors, etc., at Portwood Gasworks, for Gas Committee. S. Meunier, Engineer and Manager. Dep. £2 2s.

Dec. 12.—**Ashborne.**—Buildings.—High-class pumping station building on property at Rodsley, near Ashborne, for U.D.C. Dr. H. Lapworth, engineer, 25, Victoria-st., S.W.1. Dep. £3.

Dec. 12.—**Fort William.**—Houses.—16 houses in cleared area, for T.C. Matheson Fraser, F.F.S., 197, St. Vincent-st., Glasgow.

Dec. 12.—**Innerleithen.**—Houses.—28 flatted houses in blocks of four, for T.C. J. C. Miller, B.S.

Dec. 12.—**Middleton.**—Houses.—Erection of 48 houses on the Boarshaw estate, for the Corporation. Town Clerk, Town Hall, Middleton, Lancs. Dep. £2 2s.

Dec. 12.—**Newport (I. of W.).**—Painting.—External and repairs to Ashey school, for Isle of Wight C.C. S. R. Cocks, C.S., 4, St. Thomas-st., Ryde.

Dec. 12.—**Oakdale.**—Extensions.—Also alterations to Oakdale Workmen's Cottage Hospital, for Oakdale Hospital Committee. A. F. Webb, L.R.I.B.A., architect, Tredegar-chambers, Blackwood. Dep. £3 3s.

Dec. 13.—**Belfast.**—Superstructure.—Above the basement story, New Parliament Building, Stormont Castle Estate, for the H.M.O.W. Contracts Branch, King Charles-st., S.W.1. Dep. £1 1s.

Dec. 13.—**Cardiff.**—Repairs.—For (1) alterations and additions, (2) plumbing and sanitary work at Pembroke House, Conway-rd., for B.G. R. Stephenson, C., 11, Park-place.

Dec. 13.—**Chipping Norton.**—Cottages.—10 at Charlbury, for R.D.C. A. T. Green, S., "Pentewan," Enstone-rd. Dep. £2 2s.

Dec. 13.—**Glamorgan.**—Additions.—Also alterations to entrance lodge at Hensol Castle, Pontyclun, for C.C. W. E. R. Allen, Clerk to the Committee for the Care of the Mentally Defective, County Hall, Cardiff.

Dec. 13.—**Glasgow.**—Bunker.—Ferro-concrete coke bunker at Dawsholm Gas Works, for T.C. D. Stenhouse, T.C. Dep. £2 2s.

Dec. 13.—**Stretford.**—Baths.—Building, engineering and reinforced concrete work for public baths, for U.D.C. P. Howard, A.R.I.B.A., 88, Mosley-st., Manchester. Dep. £2 2s.

★Dec. 13.—**Woking.**—Cottages.—Erection of 10 pairs of cottages at Woking, for the U.D.C. Surveyor to the Council, Council Offices, Woking.

Dec. 14.—**Dersingham.**—Cottages.—Pair of semi-detached cottages, and for carrying out of certain alterations to existing stables at Police Station, for Norfolk C.C. S. H. Warren, C.S., 9, Queen Street, Norwich. Dep. £1 1s.

Dec. 14.—**Devon.**—Houses.—One each at Culmstock and Crownhill, for C.C. C.A., 97, Heavitree-rd., Exeter.

Dec. 14.—**Dublin.**—Buildings.—Sanitary blocks and drainage scheme at New Borough schools, Swords, Co. Dublin, for Board of Governors. F. P. Russell, architect, 7, D'Olier-st., Dep. £1 1s.

Dec. 14.—**Kedington.**—Additions.—Also alterations to Kedington Institution, to convert a portion of some into a Mental Hospital, for East and West Suffolk C.C.s. Hunt & Coates, architects, 51a, Abbeygate-st., Bury St. Edmund's. Dep. £3 3s.

Dec. 14.—**Kendal.**—Post Office.—Erection of, at Kendal, for the H.M.O.W. Contracts Branch, King Charles-st., S.W.1. Dep. £1 1s. (Cheques payable to the Commissioners.)

Dec. 14.—**North Dublin.**—Cottages.—11 labourers' cottages, for R.D.C. F. P. Russell, C.E., 7, D'Olier-st., Dublin. Dep. 10s.

Dec. 14.—**Rushden.**—Bath.—Open-air swimming bath, for U.D.C. L. G. Mouchel & Partners, Ltd., engineers, 36-38, Victoria-st., S.W.1. Dep. £2 2s.

Dec. 15.—**Ireland.**—Building.—Erection of station for the Garda Siochana at Fanore, Co. Clare; reconstruction of building for the Garda Siochana at Schull, Co. Cork; and adaptation of building for the Garda Siochana at Annagry, Co. Donegal, for Commissioners of Public Works. T. Cassedy, secretary, Office of Public Works, Dublin. Dep. £1 each.

Dec. 15.—**Newry.**—Rebuilding.—Of Windsor Hill Public Elementary School, for Down Regional E.C. Castor J. Love, architect and civil engineer, 11, Chichester-st., Belfast. Dep. £2 2s.

Dec. 15.—**Sheffield.**—Heating.—Heating installation at Tenter-st. tramway depot and garage, for T.C. W. Geo. Davies, City A. Dep. £2.

Dec. 16.—**Watford.**—Market.—Open market, comprising demolition of buildings and construction of drainage and paving works, for T.C. W. W. Newman, B.E. Dep. £2 2s.

Dec. 19.—**Bury St. Edmund's.**—Houses.—60 houses on Perry's Barn site, for T.C. R. H. Beaumont, B.S. Dep. £2 2s

Dec. 19.—**Edinburgh.**—Building.—2 residential blocks, A1 and A2, at Gogarburn Institution, for District Board of Control. S. Kaye, A.R.I.B.A., 14, Hill-st.

★Dec. 19.—**Hanworth.**—Houses.—Erection of 18 houses for Staines R.D.C. The Surveyor, London-road, Ashford, Middlesex. Dep. £2 2s.

★Dec. 19.—**Leamington Spa.**—Cottages.—Erection of (a) 50 non-parlour type cottages and (b) 12 parlour type cottages, for the Corporation. Borough Engineer, Town Hall, Leamington Spa. Dep. £2 2s.

Dec. 19.—**London.**—Houses.—102 houses and 112 flats on Lewisham (Grove-park) housing scheme, for Lewisham B.C. W. R. Davidge, F.R.I.B.A., 5, Victoria-st., S.W.1. Dep. £2 2s.

Dec. 19.—**Newquay.**—Houses.—40, for U.D.C. C. W. Walters, deputy-surveyor. Dep £5.

★Dec. 29.—**Southend.**—Open Air School.—Erection of, for the Education Committee. Director of Education, Education Office, Southend-on-Sea. Dep. £2 2s, (payable to the Corporation).

Dec. 31. — **Kingston-on-Thames.** — Operating Theatre.—Erection and completion at the hospital in Kingston Hill, for the Guardians of the Poor of the Kingston Union. F. Danby Smith, F.R.I.B.A., Parliament-mansions, Victoria-st., Westminster, S.W.1. Dep. £5 5s. (Cheques to be made payable to the Treasurer of the Kingston Union.)

——.—**Fenton (Staffs).**—Alterations.—To new branch shop, for Swettenham's Co-operative Institutions at Fenton. Hollins & Jones, architects, Lloyds Bank-chambers, Newcastle, Staffs. Dep. £1.

——.—**Milford Haven.**—Hall.—War Memorial Hall at Hubberston, Milford Haven. P. O. Davies, Winslade, Milford Haven. Dep. £1 1s.

——.—**Newbridge (Mon.).**—Houses.—Two houses and shops at Treowen Village, for Llanover Trustees. G. H. Davies, L.R.I.B.A., 12, Cross-st., Abergavenny, Mon. Dep. £2 2s.

——.—**Pickering.**—Shop.—Also office building for the Pickering and District Co-operative Society, Ltd. Secretary, Southgate.

## MATERIALS, ETC.

Dec. 5.—**Blean.**—Paints, etc.—For B.G. W. T. Brooks, C. 4, Tower-parade, Whitstable.

Dec. 5.—**Broadstairs and St. Peter's.**—Road Materials.—For U.D.C. H. Hurd, S.

Dec. 6.—**London.**—Steelwork.—For (1) 2,050 tons steel material, and (2) 164 tons galvanised steel or ironwork, for Madras and Southern Mahratta Rly. Co. Director, 25, Buckingham Palace-rd., S.W.1.

Dec. 7.—**Belfast.**—Builder's Materials.—For Water Board. W. I. Quinn, secretary.

Dec. 8.—**Ely.**—Water Pipes, etc.—For U.D.C.—A. K. Campbell, C., Market-sq.

Dec. 9.—**India.**—Steel.—Various, for North Western Rly., Lahore. Controller of stores.

Dec. 10.—**Buxton.**—Highway Materials.—For T.C. F. Langley, B.E.

Dec. 10.—**Stockton-on-Tees.**—Road Materials.—For T.C. T. Downey, T.C.

Dec. 15.—**Durham.**—Pipes, etc.—For County Water Board. H. Robinson, engineer, Bishop Auckland.

Dec. 16.—**East Suffolk.**—Road Materials.—For C.C. C.S., Ipswich.

Dec. 16.—**India.**—Steel Material.—For Bombay, Baroda and Central India Railway Co. S. G. S. Young, secretary, White Mansion, 91, Petty France, S.W.1.

Dec. 17.—**Lindsey (Lincs).**—Highway Materials.—For C.C. G. Bradshaw, C.S., Lincoln.

Dec. 20.—**Dover.**—Granite.—For T.C. Wm. Boulton Smith, B.E.

Dec. 20.—**Montgomery.**—Highway Materials.—For C.C. T. L. Oliver, C.S., Welshpool.

Dec. 23.—**Berkshire.**—Road Material.—For C C Lt.-Col. J. F. Hawkins, C.S., Reading.

## ENGINEERING, IRON AND STEEL.

Dec. 5.—**Bicester.**—Water Supply.—One mile of 3-in. and 2-in. and about half a mile of 1-in. water mains, complete with a 14-ft. windmill, engine house and petrol engine, and storage tanks complete with all necessary valves, washouts, standpipes, etc., at Blackthorn, for R.D.C. H. B. Eames, S., South View, King's End. Dep. £3.

Dec. 5.—**London.**—Reconstruction.—Also widening of Beverley Bridge, carrying Kingston-rd., over Beverley Brook, for C.C. Chief Engineer, Old County Hall, Spring Gardens, S.W.1. Dep. £2.

Dec. 5.—**Weeley.**—Reconstruction of Weeley bridge on Weeley-Thorpe-rd., for Essex C.C. W. H. Morgan, C.S., Chelmsford. Dep. £2 2s.

Dec. 6.—**West Bridgford.**—Sewage, etc.—744 yds. 15-in. stoneware, 407 yds. 15-in. iron, 761 yds. 12 in. stoneware, 723 yds. 12-in. iron pipe sewer; two upward flow sewage tanks, air drying mud beds, and contingent works, for U.D.C. Wm. Pare, engineer. Dep. £3 3s.

Dec. 8.—**London.**—Steelwork.—106 tons of steel girders and other steel and iron work, for G.W.R. F. R. E. Davis, Secretary, Paddington Station. Dep. £2 2s.

★Dec. 9.—**Croydon.**—Filter House.—At Addington Waterworks, for C.B. Borough Engineer's Office, Town Hall, Croydon. Dep. £1 1s.

Dec. 10.—**Cairo.**—Reservoir.—Supply and installation of steel reservoir of 200 cubic metres capacity on a steel framework tower, etc., for Ministry of Interior. Department of Overseas Trade, 35, Old Queen-st., S.W.1. (Ref. A.X.5494.)

Dec. 10.—**Hinckley.**—Tank.—Gasholder and steel tank, for U.D.C. F. Lee, engineer.

Dec. 10.—**Newry.**—Bridge.—Single-leaf steel swing bridge over canal at Godfrey-bridge, for U.D.C. C. Blaney, Town S. Dep. £1 1s.

Dec. 12.—**Darwen.**—Culvert.—Reinforced concrete reservoir, culvert, etc., for T.C. B.E. Dep. £2 2s.

Dec. 12.—**Easingwold.**—Water Supply.—Spring collection works, covered storage reservoirs, cast-iron tank on masonry tower, 11,650 lin. yds. of 5-in., 3,000 lin. yds. of 4-in. "Spun" iron water mains, and 3,400 yds. of 3-in. cast-iron water mains, with lead and yarn joints, also valves, washouts, fire hydrants, consumers' services, pillar fountains, pressure-reducing valve, and other works in connection therewith at Coxwold, Oulston, Easingwold and Crayke, for R.D.C. Fairbank and Son, engineers, Tudor House, Stonegate, Yorks. Dep. £3 3s.

Dec. 12.—**Leeds.**—Reservoir.—Design and tender for a watertight reinforced concrete reservoir at Middleton; watertight reinforced concrete elevated tank at Tinshill, and concrete service reservoir, including design and tender for the reinforced concrete roof and piers, for T.C. H. Shortreed, Waterworks Manager. Dep. £1 1s. each.

Dec. 14.—**Ripon.**—Water Supply.—Providing and laying of 1,276 lin. yds. of 4-in. cast-iron or spun iron pipes, 2,000 lin. yds., or thereabouts, of 3-in. cast-iron pipes, together with construction of a covered service reservoir, windmill, engine house, oil engine, hydrants, valves, and all other incidental works at Bishop Monkton, for R.D.C. F. J. Rodwell, engineer, 37 and 38, Prudential Buildings, Park-row, Leeds. Dep. £2 2s.

Dec. 15.—**Egypt.**—Reservoir.—Erection in courtyard of Toura Prison of steel reservoir of 150 cubic metres capacity on a steel framework tower, including the necessary ladders, platforms, piping and fittings, as well as a water level indicator, for Cairo Local Commissioners. Department of Overseas Trade, 35, Old Queen-st., S.W.1. (Ref. A.X. 5462.)

Dec. 15.—**Madras.**—Steelwork.—204 tons structural steel work for engine shed, together with corrugated asbestos sheets, patent glazing with wired glass, galvd. c.i. piping and fencing pales, etc., for Madras and Southern Mahratta Rly. Co. Director, 25, Buckingham Palace-rd., S.W.1.

Dec. 15.—**South Africa.**—Steelwork.—Structural steelwork, etc., for wagon repair shop, for Railways and Harbours Committee. Department of Overseas Trade, 35, Old Queen-st., S.W.1. (Rev. A.X. 5424.)

Dec. 19. — **Knaresborough.** — Widening.—In masonry, Knaresborough High Bridge, for West Riding C.C. C.S., Wakefield. Dep. £1.

Dec. 19.—**Luddendenfoot.**—Widening.—In steelwork and masonry of Luddendenfoot river and canal bridges, and the improvement of Chatburn Corner, for West Riding C.C. C.S., Wakefield. Dep. £1.

Dec. 20.—**London.**—Bridgework.—For Director-General of India Store Department. Branch 15, Belvedere-rd., Lambeth, S.E.1.

Dec. 24.—**Sproughton.**—Bridge.—Temporary bridge, pulling down existing timber bridge and building three-span ferro-concrete bridge, for East Suffolk C.C. W. Jervis, C.S., Ipswich. Dep. £2 2s.

Jan. 2, 1928.—**Molesey.**—Cementing.—Internal reinforced cement rendering of 9 steel coal bunkers at Walton pumping station, Hurst-rd., for M.W.B. G. F. Stringer, C., 173, Rosebery-av., E.C.1.

Jan. 9, 1928.—**India.**—Bridgework.—For Director-General, India Store Department, Branch No. 11, Belvedere-rd., S.E.1.

Feb. 21, 1928.—**New Zealand.**—Deviation.—Construction of Wellington-Tawa flat deviation, Wellington-New Plymouth Railway, for Public Works Dept., Wellington. Commissioner for New Zealand, 415, Strand, London, W.C.2.

## ROAD, SEWERAGE, AND WATER WORKS.

Dec. 5.—**Harrogate.**—Drainage.—Of playing fields at Harrogate Secondary school, for West Riding E.C. Education Department, County Hall, Wakefield.

Dec. 5.—**Leek.**—Sewer.—Sundry street and sewer works for development of housing site, for U.D.C. W. E. Beacham, S.

Dec. 5.—**Slough.**—Making-up.—Of Stanley Cottages and Grays-place, for U.D.C. A. Bromly, Town Surveyor.

Dec. 5.—**Somerset.**—Reconstruction.—Of section of Bristol-Exeter-rd., Langford and East Brent by-pass-rds., for C.C. E. Stead, C.S., 49, High-st., Weston-super-Mare. Dep. £5.

Dec. 5.—**Windsor.**—Extensions.—Construction of about three miles of 6-in., 7-in., 8-in., 9-in. and 12-in. stoneware and cast-iron pipe sewers, with manholes and other works, at Sunninghill and Sunningdale, for R.D.C. Lemon and Blizard, engineers, 9, Victoria-st., Westminster. Dep. £5 5s.

Dec. 6.—**Esher.**—Widening.—Of Ember Court-rd. (Section 2) and Ember-lane (Section 2), Thames Ditton, for U.D.C.S.

Dec. 7.—**Clacton.**—Drainage.—Constructing approximately 363 yds. lin. of 6-in diameter sewer and manholes at recreation ground, for U.D.C. Acting Surveyor.

Dec. 7.—**Manchester.**—Sewers.—Construction of Moss Side and Whalley Range drainage new relief sewers, for T.C. City E. Dep. £5 5s.

Dec. 7.—**Merton and Morden.**—Making-up.—Stanley-av., Cobham-av., Byron-av., Consfield-av., Blakes-terr., for U.D.C. G. Jerram, S. Dep. £1 each.

Dec. 8.—**Kingussie.**—Reconstruction.—Of 1¼ miles of main-rd., for T.C. A. Cattanach, B.S. Dep. £3 3s.

Dec. 8.—**Leeds.**—Paving.—Tar paving footpaths, kerbing, flagging, concreting and paving channels, etc., in York-rd. and Harrogate-rd., for T.C. E. W. Cockerlyne, Highways Engineer. Dep. £1 1s.

Dec. 8.—**Southend-on-Sea.**—Making-up.—Edith-rd., Fairfax-dr., section 10; Flemming-av., section 1; Hill-rd.; Honiton-rd., section 2; Maple-av.; Sandown-av. and St. Benets-rd., and incidental works in connection thereto, for C.B. R. H. Dyer, B.E. and S. Dep. £1 each rd.

Dec. 9.—**London.**—Road.—Constructional, surfacing and outfall drainage work in connection with Epping Forest section of North Circular Arterial-rd., Walthamstow, for M.T. Chief Engineer, Roads Department, Ministry of Transport, 7, Whitehall-gardens, S.W.1. Dep. £25.

Dec. 10.—**Hayfield.**—Drainage.—900 lin. yds. of stoneware pipe sewer, 9-in. in diameter; 33 lin. yds. of cast-iron ditto, ditto, under bed of the River Sett, with all manholes, lampholes, flushing tanks, ventilators, connections, etc., for R.D.C. G. Herbert Bayley, S., 7, Sparth-lane, Stockport, Dep. £1 1s.

Dec. 10.—**Manchester.**—Surfacing.—With tarmacadam and concrete various roads on Moston (Broadway) housing estate, for T.C. P. M. Heath, T.C.

Dec. 10.—**Otley.**—Sewerage.—378 yds. 15-in., 221 yds. 12-in. and 1,225 yds. 9-in. salt-glazed pipes, with manholes and other incidental works, at Bradford-rd., for U.D.C. C. F. Hodgson, S Dep. £2.

Dec. 10.—**Thurstonland.**—Widening.—New Mill district main road at Scar End, Thurstonland, nr. Huddersfield, for West Riding C.C. West Riding Surveyor, County Hall, Wakefield. Dep. £1.

Dec. 12.—**Guildford.**—Sewage.—Widening of inlet channel at Bellfields' sewage disposal works, for T.C. J. W. Hipwood, B.S.

Dec. 12.—**Romford.**—Drainage.—Of Romford Institution for B.G. Messrs. Harrington and Evans, architects, Western Chambers, South-st. Dep. £3 3s.

Dec. 13.—**Gosforth.**—Improvements.—Carriageway and footway construction, etc., at Back-st., Bowsden-ter., Elmfield-grove, Moor-cres., for U.D.C. Geo. Nelson, E. and S.

Dec. 13.—**Tottenham.**—Making-up.—Dowsett-rd., for U.D.C. E. Dep. 10s. 6d.

Dec. 14.—**Chesham.**—Roads.—Also laying of sewers on Chiltern Hills Building estate. F. E. Howard & Sons, architects and surveyors. Dep. £1 1s.

Dec. 14.—**Merton and Morden.**—Making-up.—Greenway, approximately 290 yds. in length, for U.D.C. G. Jerram, S. Dep. £1.

Dec. 14.—**Morecambe.**—Improvements.—Bold-st., Highfield-cres., Lake-av., Scott-av., Windsor-av., Leyster-st., Belfield-rd., Lansdowne-rd., Cable-st., Cable-st., Lodges-grove, Sulby-grove, for T.C. P. W. Ladmore, B.E. and S. Dep. 10s. 6d.

Dec. 15.—**Nottingham.**—Sewers.—Four miles of concrete pipe sewers, together with manholes, gulleys and other appurtenant works and excavation forming and paving of about two miles of street works consisting of tar macadam, tar paving, concrete kerbing, etc., required in the development of Bulwell Hall housing estate, for T.C. T. Wallis Gordon, City E. and S. Dep. £3 3s.

Dec. 16.—**Carlisle.**—Sewers.—Also roadways on Botcherby and Raffles-Newtown housing estates, for T.C. P. Dalton, A.R.I.B.A., City E. and S. Dep. 10s.

Dec. 19.—**Bromley.**—Extension.—Of sewer in Crofton-lane and Crofton-rd., Orpington, for R.D.C. L. J. Small, E. Dep. £3 3s.

Dec. 19.—**Newquay.**—Streets.—Also sewers, for U.D.C., S. Dep. £5.

Dec. 19.—**Prestwich.**—Making-up.—Nursery-rd., from Poppythorn-lane to Pine-grove, Elm-grove, Pine-grove, Willow-rd., Maple-grove, Holyrood-rd., passage at rear of 155 to 167 Bury Old-rd., and Arthur-st. (between Gardner-rd. and Knott-lane), for U.D.C. M. A. Piercy, E. and S. Dep. £2 2s.

★Dec. 19.—**Wandsworth.**—Surfacing and paving of carriageways and footways at East Hill estate, for the L.C.C. Clerk of the Council, County Hall, Westminster, S.E.1. Dep. £1.

Dec. 20.—**Bushey.**—Making-up.—Of Bournehall-lane, for U.D.C. E. E. Ryder, E. and S. Dep. £2 2s.

Dec. 20.—**Wood Green.**—Improvements.—To Lyndhurst-rd. (section 2), Lansdowne-rd. (section 3), for U.D.C. C. H. Croxford, E. and S. Dep. £1 1s.

★Dec. 28.—**Edmonton.**—Road Work.—Repairing certain roadways at the Chase Farm schools, The Ridgeway, Enfield, for the Edmonton Union. E. Ridley, Clerk, 77, Bridport-road, N.18.

Dec. 31.—**Hoylake and West Kirby.**—Making-up.—Hadfield-av., Hoylake; Elm-grove extension, Hoylake; Ferndale-rd., extension, Hoylake; passage off York-av., West Kirby; passage off York-av., West Kirby, at rear of premises, Caldy-rd., for U.D.C. R. W. Fraser, E. and S. Dep. £2 2s.

★Jan. 11, 1928.—**Tottenham.**—Drainage.—Road and drainage at Tottenham Cemetery, Tottenham N., for Tottenham and Wood Green Burial Board J. C. S. Mummery, architect, 34, Bloomsbury-sq. W.C.1.

——.—**Dundee.**—Widening.—Dundee-rd. at "Tay park" and "Fairfield," for T.C. G. Baxter, City E.

——.—**Wigston Magna.** — Lay-out. — Recreation ground, 8¼ acres in area, situate in Aylestone-lane, for U.D.C. W. G. J. Clark, E. and S. Dep. £3 3s.

## Competitions.

(*See Competition News, p.* 848)

## Auction Sales, Tenders, etc.

Dec. 6 and following days.—Joseph Hibbard & Sons will sell without reserve final portion, by order of the liquidator, Mr. C. H. Bull, F.C.A., re C. B. N. Snewin & Sons, Ltd., (in voluntary liquidation). Well-seasoned hardwoods, in logs, planks and boards, crane, office furniture, lease of wharf premises. Auctioneers, 15, Newington-green, Islington, N.16.

Dec. 7.—**London.**—Baxter Payne and Lepper will sell by order of the mortgagees (unless previously disposed of), at the Mart, E.C., land on the Hillside Estate. Auctioneers, Bromley, Kent, ad 14, Sackville-st., W.1.

Dec. 7.—**London.**—Daniel Smith, Oakley and Garrard will sell at London Auction Mart, 155, Queen Victoria-st., E.C.4., by order of L.M.S. Railway, freehold building land at Mill Hill. Auctioneers, 4/5, Charles-st., S.W.1.

Dec. 8.—**London.**—Tyser, Greenwood and Co. will sell Riverside Manufacturing Site, Strand-on-the-Green, Chiswick, Nos. 62 and 63. Auctioneers, 386, High-rd., Chiswick, W.4.

## Public Appointments.

★Dec. 9.—**Hendon.**—Quantity Surveyor.—Required by the Education Committee for a new school to be erected on the Watling Housing estate. The Secretary, Education Offices, The Burroughs, Hendon, N.W.4.

★Dec. 10.—**Blackburn.**—Chief Architectural Assistant required by the Cty. B.C. H. M. Webb, B.Sc., Assoc.M.Inst.C.E. B.E., Town Hall, Blackburn.

Dec. 10.—**Bradford.**—Architectural Assistant required by the City Council in Architect's Dept. Town Clerk, Town Hall, Bradford, endorsed "Architectural Assistant."

★Dec. 10.—**Northampton.**—Temporary Architectural Assistant.—Required by the Borough Engineer, Guildhall, Northampton.

Dec. 12.—**London.**—(a) One Grade I. Assistant, (b) Four Grade II. Assistants required by the Miners' Welfare Committee. Under Secretary for Mines, Establishment Branch, Mines Dept., Dean Stanley-st., S.W.1.

★Dec. 12. — **Nottingham.** — Experienced Architectural Assistant required by the City Council. T. Cecil Howitt, 58-59, Long-row, Birmingham.

Dec. 14. — **London.** — Assistant Structural Engineer, Grade 11, in H.M.O.W. Those wishing to compete for the post apply Sec., H.M.O.W., Storey's Gate, Westminster, S.W.1.

★Dec. 14.—**Singapore.**—Assistant Building Surveyor (unmarried) required by the Municipal Commissioners of Singapore. Peirce & Williams, M.M.Inst.C.E., 64, Victoria-st., London, S.W.1, Agents for the Commissioners.

★——.—**British Guiana.** — Foremen (4).—Required by the Government of Guiana for 2 to 2½ years' service. Crown Agents for the Colonies, 4, Millbank, London, S.W.1. M/273.

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### Builder's Estate.

Mr. David Griffith Price, of 7, Hickman-road, Cardiff, founder of Price Bros. (Penarth), Ltd., builders and contractors (net personalty, £16,483), left £21,583.

### Obituary.

The death has occurred recently, at his residence, Heston, Newcastle-on-Tyne, of Mr. W. J. Wright, builder and contractor, aged 48.

# PROPOSED NEW BUILDINGS & OTHER WORKS*

IN these lists care is taken to ensure the accuracy of the information given, but it may occasionally happen that, owing to building owners taking the responsibility of commencing work before plans are finally approved by the local authorities, "proposed" works at the time of publication have been actually commenced. Abbreviations: T.C. for Town Council; U.D.C. for Urban District Council; R.D.C. for Rural District Council; E.C. for Education Committee; B.G. for Board of Guardians; B.C. for Borough Council; P.C. for Parish Council; M.H. for Ministry of Health; M.T. for Ministry of Transport; C.B. for County Borough; B.E. for Board of Education; M.A.B. for Metropolitan Asylums Board; and M.W.B. for Metropolitan Water Board.

FOLLOWING is a list of abbreviations:—Borough Surveyor, B.S.; Borough Engineer, B.E.; District Surveyor, D.S.; Clerk, C.; Town Clerk, T.C.; County Engineer, C.E.; County Surveyor, C.S.; County Architect, C.A.; Surveyor, S.; Engineer, E.; Borough Architect, B.A.; Architect, A.

**Allerton-Bywater.**—Local church authorities propose to rebuild mission premises.

**Annalong.**—Improvements to harbour been discussed by Kilkeel Rural Council.

**Armagh.**—Soldiers' and Sailors' Land Trust decided to approve arrangements for acquisition of sites for erection of cottages.—Been decided to erect fire brigade station adjacent to electricity power station in Dobbin-st.

**Aylesbury.**—Consent of M.H. to acquisition for £6,250 of whole of Manor House property for purposes of an institution been received.

**Bangor.**—Northern Ministry sanctioned U.D.C.'s applications for following loans:—£4,400 for pavilion at Carnalea and extension of the golf course.

**Barking Town.**—U.D.C. recommend erection of 13 blocks of flats at Upney estate.—Plans passed:—Shop in East-st., for F. W. Woolworth & Co., Ltd.; 64 houses on Faircross estate, for E. Glenny & Son; additions to factory, Broadway, for British East Light, Ltd.

**Barnet.**—Isolation Hospital Committee have considered plans and particulars prepared by E. Simmons, F.R.I.B.A., for proposed extensive additions to hospital in Mays-lane.

**Bedford.**—T.C. passed plans:—E. H. C. Inskip for Bedford Union, nurses home, Kimbolton-rd.; G. P. Allen for W. Laughton, 15 garages, Grafton-rd.; H. Young & Son, for F. Dickens, 3 houses, Winifred-rd.

**Belfast.**—Following plans been approved by City S.:—4 villas, Stranmillis-rd., for S. Hewitt, architect T. R. Eagar; 5 villas, Palmsterston-rd., for R. O. Templeton, architect J. MacGeagh; additions to school, Barrack-st., for Rev. J. A. Moloney, architect, F. McArdle; 4 villas, Allesbury-drive, for H. and J. Martin, architects and builders; 5 houses, Colinview-st., for N. Boyd, architect J. McAlery; 6 houses, Kitchener-st., for J. McKee, architect C. A. Aickin; 19 houses, Clara-av., for J. Robinson, architect and builder; 4 villas, Ballysillan-rd., for R. McMullan, architect T. Callender; public elementary school, Limestone-rd., for E.C., architect R. S. Wilshere; 6 houses, Hewitt-parade, for R. Hewitt & Son, architect W. R. Rogers; alterations to premises, Federation-st., for Belfast Co-operative Society, architects S. Stevenson & Sons.

**Blackpool.**—Scheme is proposed for memorial hall at South shore. Architect, A. A. C. Moore.—Halstead Best, F.R.I.B.A., preparing plans for new First Church of Christ Scientist, Whitegate-drive.

**Brightlingsea.**—Plans been approved by U.D.C. for 3 houses in Station-rd., for Blyth Bros.

**Caine.**—T.C. under consideration erection of ten more houses.—B.S. is to prepare plans for conversion of police station into public conveniences.

**Carrickmacross.** — C.C. approved plans for 8 houses.

**Carrick-on-Sur.**—Messrs. Hopkinson, Limerick, are carrying out renovation of St. Nicholas Catholic Church

**Chichester.**—Licensing and Depot Committee are considering extending the depot and instructed the surveyor to prepare a plan. Plans passed:—6 houses for H. Geall.

**Chorley.**—Threlfalls Brewery propose reconstruction of premises in Pall Mall.

**Cork.**—Minister for Industry and Commerce received application from C.C. for permission to construct a permanent fixed bridge over Glashaboy River at Dunkettle

**Coulsdon and Purley.**—U.D.C. recommend surveyor to prepare a scheme for 20 three-bedroom type houses.—Plans passed:—F. J. Webb, 3 pairs semi-detached houses, Green-lane, Purley; A. H. Klein, dairy buildings, Godstone-rd., Purley; East Surrey Water Co., alteration to drainage, Smitham pumping station, Brighton-rd., Coulsdon; V. Shire, 5 houses, Chipstead Valley-rd., Coulsdon; E. G. Price and A. B. Taylor, 6 shops with flats, Brighton-rd., and Grovelands-rd., Purley.

**Coventry.**—General Works Committee of City Council have considered plans for 32 houses.

**Croydon.**—M.H. sanctioned borrowing of £16,143, for erection of dwellings for working classes in Upper Coombe-st.—Plans passed:—E. Joisce, 4 garages and stores, Pawsons-rd.; H. Macintosh, 13 houses and 2 garages, Galpins-rd.; W. Peck & Co., alterations and additions, 98, Church-st.; P. Richardson, 2 houses, Dickenson's-lane; F. Bryant, 6 garages and stores, Bert-rd.; New and Marriage, 4 houses and garage, Orleans-rd.

**Derby.**—It is proposed to erect church for parish of St. Mary at Derby. Scheme is to cost about £6,000 and has been planned by Naylott, Sale & Woore.

**Dewsbury.**—M.H. sanctioned borrowing of £3,775 for open-air school on Moorlands estate.

**Dublin.**—Local Government Department has authorised North Dublin R.D.C. to obtain loan of £5,000 for erecting labourers' cottages.—Free State Local Government Department held inquiry into application of City Commissioners for £26,500 for reconstructing the city abattoir. Beckett & Harrington, 97, Stephen's-green, completed plans for factory in Upper Abbey-st., for Leetham, Ltd.

**Ealing.**—Alterations and additions to "Ealing Park Tavern," South Ealing-rd. N. Parr, architect; H. W. Binns, architect, for memorial cloisters at St. David's Home, Castlebar Hill; H. A. Steel, architect, for 60 houses at Hill Rise, for S. Baxter; F. A. Walters, architect for additions to St. Benedict's Church, Charlbury-grove; Tyler and Tyler, architects, 82 houses at Garrard-av., and 32 houses at Croft-gardens, for Walters and Blake.

**East Barnet.**—U.D.C. passed plans:—3 houses in Woodville-rd., for Mr. Shepherd; rebuilding of Two Brewers public-house, Hadley; 5 garages at rear of Clock House-parade, for H. E. Percy.

**Eccles.**—T.C. passed plans:—J. H. Turner, 10 semi-detached houses, Pine-grove, Monton.

**Edmonton.**—U.D.C. are to make application to M.H. for sanction to £73,800 for purpose of erection of 148 houses on Edmonton Hyde estate.—Council are to negotiate for purchase of 12 acres of land on west side of Hazelbury-rd., for purpose of elementary and open-air schools.—Plans passed:—S. Parkes & Brown, 6 semi-detached houses, Ranworth-rd., Town-rd.; G. W. Newman, factory building, Bull-lane for the Klinger Manufacturing Co.

**Elford.**—Sugar Auxiliaries, Ltd., of London, propose to erect sugar beet factory upon a site on main Lichfield and Tamworth-rd.

**Erith.**—U.D.C. passed plans:—6 houses, Brampton-av., Belvedere, A. H. Jennings.

**Erpingham.**—R.D.C. are to erect houses at Aylmerton (4), Gresham (2), Holt (4), Knapton (2), Overstrand (2), Southrepps (4), Trunch (4), and Bodham (4).—Application is to be made for £4,000 from M.H. for erection of 10 houses at Felbrigg, Runton, Cley, and Baconsthorpe.

**Eton.**—R.D.C. passed plans:—Taplow, sub-station for Metropolitan Electric Supply Co.; Burnham, 7 houses on Taplow Station estate for W. G. Eyles; Denham, 3 houses on Higher Denham estate for J. Lilley; Langley Marish, 5 houses in Langley Brown-ave., for B. E. Smith; Datchet, chapel of St. Augustines, Eton-rd., for the Rt. Hon. Lord Braye.

**Gawthorpe.**—Funds being raised to meet cost of improvements at Gawthorpe and Chickenley Heath Churchyard, which includes cost of removal and re-erection of boundary wall.

**Gerrard's Cross.**—New secondary school is to be erected.

**Halifax.**—Improvement Committee of Corporation obtained sanction from M.H. to borrowing of £918 for purchase of a block of property at bottom of York-crescent, Rochdale-rd., for road widening.

**Harpenden.**—U.D.C. passed plans:—16 houses in Barnfield-rd., for Mrs. M. R. Thomas; electricity sub-station at National Children's Homes.

**Hendon.**—U.D.C. passed plans:—2 houses and garages, Millway, H. F. Nicholls; 4 garages, Colindeep-lane, H. Holmes; 11 lock-up garages, Cricklewood Broadway, Brown; 3 houses, West Heath-rd., C. W. B. Simmond.

**Holywood.**—Application been made to Ministry of Home Affairs for sanction to £6,654 for various schemes.

**Hounslow.**—Council House is to be extended.

**Hull.**—T.C. passed plans:—A. T. Lison, 6 houses, Dundee-st.; A. Sash, 19 houses, Belgrave, drive; A. H. Evans & Co., Ltd., 4 houses, Belgrave-drive; W. Garbutt, 9 houses, Claremont-av.

**Kenilworth.**—Warwickshire C.C. forwarded notice to T.C. of their intention to erect public elementary school for about 400 children.

**Kidderminster.**—M. Burtons, Ltd., propose to erect premises at junction of Vicar-st. and High-st.

**Kilkeel.**—B.G. received letter from Ministry of Home Affairs to the effect that Ministry of Finance has recommended grant of £950 for making alterations and improvements to entrance of Mourne District Hospital.

**Larne.**—U.D.C. approved plans for 5 houses, Bay-rd., for Mrs. A. Dorman.

**London (Deckhead).**—A new fire station, costing £12,595, is to be built.

**London (Fulham).**—B.C. received sanction to loan of £775 for maternity and child welfare centre at Greyhound-rd.

**London (Paddington).**—B.C. recommend application to M.H. for sanction to borrow £17,037 for establishing Turkish and Russian vapour baths on "The Lodge" site, Porchester-rd.

**London (Poplar).**—L.C.C. recommend borrowing by B.C. of £2,331 for housing purposes.

**London (Woolwich).**—B.C. recommend application be made to L.C.C. for sanction to £35,490 for erection of 65 houses on Council's housing estate at Eltham, by direct labour.

**Londonderry.**—Corporation approved plans for erection of 34 houses.

**Luton.**—T.C. resolved that plan be approved and application made to M.H. for sanction to borrowing of £3,400 for provision of a smallpox hospital.

**Mansfield.**—Mansfield and Sutton Co-operative Society, Ltd., of Queen-st., proposing to erect dairy premises on a site at Strekweek-gate.

**Maryboro'.**—C.C. applied to Department of Local Government and Public Health for loan of £2,000 to enable the committee of Agriculture and Technical Instruction to build a new technical school.

**Middlesbrough.**—Sanitary Committee decided to purchase 12 houses with a view to further extensions to baths.

**Molesey.**—Housing Committee agreed to recommend U.D.C. to prepare a scheme for the erection of another 100 houses.

**Nenagh.**—County Technical Committee requested Tipperary C.C. to obtain a loan of £3,500 for erection of a technical school.

**Newcastle (Co. Down).**—C. Love, architect, submitted plans for new technical school.

**Newry.**—Ministry of Home Affairs sanctioned U.D.C.'s borrowing of £24,000 for street improvements, and providing bridge to replace the existing Godfrey bridge.

**Nottingham.**—Nottingham Permanent Building Society proposing to acquire the famous Dorothy Vernon House, in Friar-gate, as a site for head offices.

**Oldbury.**—M.H. held an inquiry with regard to a proposed improvement scheme in the Rounds Fold district. Council proposed to demolish 19 houses in Rounds Fold and Seven Stars-rd., and re-house people on a site on Birchfield-lane, at £11,228.

**Oldham.**—Plans being prepared for sanitary alterations at Old Mess House Hotel, Yorkshire-st., for Threlfalls Brewery.

**Olney.**—C.C. recommend purchase of site in Yardley-rd., as site for a central school.

**Omagh.**—R.D.C. adopted scheme submitted by V. Murnaghan, C.E., for new reservoir.

**Ongar.**—R.D.C. agreed to build 6 houses at Moreton.

**Ormskirk.**—E. Ware, architect, Liverpool, preparing plans for additions to hospital, estimated to cost £5,000.

**Oxenhope (Yorks).**—Trustees of Oxenhope Parish Church decided to proceed with a scheme for new church schools.

**Pontefract.**—B.G. decided to proceed with scheme for extensions to Vagrant Wards by providing additional accommodation for 40-60 beds.

**Porthcawl.**—U.D.C. passed plans for cinema in New-rd., to seat 1,250 persons.

**Portrush.**—Local Technical Instruction Committee instructed architect to submit plans for erection of a new technical school at £3,000.

**Preston.**—C.B. proposing to erect school on site in Great Shaw-st. Plans by B. Widdows, architect.

**Ramsgate.**—A tender, amounting to £57,570, has just been accepted by Corporation in connection with final stages of present housing scheme.

**Sheffield.**—J. A. Teather, L.R.I.B.A., preparing plans for Primitive Methodist Chapel at corner of Psalter-lane and Cherry Tree-rd.

**Smethwick.**—National Provincial and Union Bank of England acquired site at junction of High-st., St. Paul's-rd. and Oldbury-rd., for bank.

**Solihull.**—R.D.C. decided to apply to M.H. for provisional approval to erection of further 50 non-parlour type houses.

**Southall.**—A site for the proposed Southall Hospital has been purchased.

**South Shields.**—Rev. J. P. Byrne, St. Bede's, acquired a site rebuilding the girls' and infants' schools. Architects, T. A. Page & Sons, L. & A.R.I.B.A.

**Stockport.**—Wrathmell & Blackshaw, architects, Queen's-buildings, preparing plans for buildings in Chestergate, for the Stockport Industrial Co-operative Society, estimated to cost £30,000.

**Stretford.**—W. H. Snow, builder, acquired a site on Manchester-rd., Partington, which he proposes to develop on garden city lines.

**Surbiton.**—U.D.C. approved plans for 20 new buildings.

**Tipperary.**—South Tipperary C.C. recommend repairs of remaining bridges be done by contract

**Tottenham.**—U.D.C. passed plans:—9 houses, Walpole-rd., W. H. Upson; 4 houses, Downhills section, Cambridge-rd., F. C. Alford; 2 houses and garage, Sirdar-rd., H. A. Gurr; 9 houses and 2 garages, Higham-rd., W. Trout; 15 houses, Manor-rd., Messrs. Trout & Dilloway.

**Twickenham.**—At a cost of £16,000, King-st. and Cross Deep-rd. are to be widened.

**Tynemouth.**—T.C. passed plans:—Power station, Albert Edward Dock, by Marshall & Tweedy, for Tyne Improvement Commissioners; clerk's office and customs offices, Albert Edward Dock, by Marshall & Tweedy, for Tyne Improvement Commissioners; re-housing scheme, Percy-sq. (23 houses), by C. P. Sherwin, for Corporation.

**Uxbridge.**—Surveyor to U.D.C. produced plans of proposed lay-out of recreation ground, Recknagham Meadows, and buildings to be erected thereon. Plans are to be forwarded to M.H. for approval.—Plans passed:—Covered market premises, High-st., for Hood & Hutton; electric power sub-station, for Steel Barrel Co., Ltd.

**Warrington.**—Postmaster-General is to seek power to acquire site for extension of head Post Office.

**West Houghton.**—Threlfalls Brewery proposing to make sanitary improvements at Gray Mare Inn, Bolton-rd.

**Weston-super-Mare.**—Inquiry been held by M.H. into application of U.D.C. for sanction to borrow £14,955 for alteration and extension of Council Offices at Town Hall.

**Weymouth.**—Plans passed by T.C. S. Jackson & Sons (for J. Flower), 3 houses and shops near east end of Chapelhay-st.; E. W. Puffett, 7 pairs of semi-detached houses in Roman-rd.

**Whitworth.**—U.D.C. approved plan for bowling green pavilion at Healey Conservative Club, for G. Close.

**York.**—Bazaar is to be held in order to raise £1,300 required to complete cost of building St. Chad's Church.

* See also our List of Contracts, Competitions, etc.

# PRICES CURRENT OF MATERIALS.*

**[Owing to the exceptional circumstances which prevail at the present time, prices of materials should be confirmed by inquiry.]**

## BRICKS, &c.

| Per 1,000 Alongside, in River Thames up to London Bridge. | £ s. d. |
|---|---|
| Best Stocks | 4 5 6 |
| Second Hard Stocks | 3 19 6 |

| Per 1,000. Delivered at London Goods Stations. | £ s. d. | | £ s. d. |
|---|---|---|---|
| Flettons, at King's Cross | 2 14 3 | Best Blue Pressed Staffs | 9 5 0 |
| Do. grooved for Plaster | 2 16 3 | Do. Bullnose | 9 15 0 |
| Do. Bullnose | 3 8 3 | Blue Wire Cuts | 7 5 0 |
| Best Stourbridge Fire Brick :— | | | |
| 2½ in. | 8 11 0 | 3 in. | 10 3 0 |
| GLAZED BRICKS— | | | |
| Best White Ivory, and Salt Glazed Stretchers | 21 0 0 | D'ble Str'tch'rs | 29 10 0 |
| Headers | 20 10 0 | D'ble Headers | 26 10 0 |
| Quoins, Bullnose and 4½ in. | | One Side and two Ends | 30 10 0 |
| Flats | 27 10 0 | Two Sides and one End | 31 10 0 |
| | | Splays and Squints | 28 0 0 |

Second Quality, £1 per 1,000 less than best. Cream and buff, £2 extra over white. Other colours. Hard Glaze, £5 10s. extra over white.

### BREEZE CONCRETE SLABS.

Delivered London.

| | s. d. | | s. d. |
|---|---|---|---|
| 2 in. per yd. super | 1 11 | 3 in. per yd. super | 2 9 |
| 2½ in. " " | 2 4 | 4 in. " " | 3 6 |

| | s. d. | |
|---|---|---|
| Thames Ballast | 10 6 | per yd. |
| Pit Sand | 13 9 | " " |
| Thames Sand | 14 6 | " " |
| Best Washed Sand | 14 6 | " " |
| ½ in. Shingle for Ferro-Concrete | 12 9 | " " |
| ¼ in. | 14 0 | " " |
| ¼ in. Broken Brick | 11 6 | " " |
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delivered 2 miles radius Paddington.

Per ton delivered in London area in full van loads.

Best Portland Cement. British Standard Specification. Test £2 13 0 to £2 15 0 46s. alongside at Vauxhall in 80-ton lots.

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| Ferrocrete per ton extra on above | 0 10 0 |
| Super Cement (Waterproof) | 4 3 0 |
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| Parian Cement | 5 15 0 |
| Keene's Cement, White | 5 15 0 |
| " " Pink | 5 10 0 |
| Plaster, Coarse, Pink | 3 0 0 |
| " " White | 3 12 6 |
| " Fine | 5 12 0 |
| Sirapite, Coarse | 3 9 0 |
| " Finish | 3 17 0 |
| Grey Stone Lime | 2 10 9 |
| Chalk Lime | 2 10 9 |
| Best Ground Blue Lias Lime | 2 13 6 |
| Hair per cwt. | 2 2 6 |
| Granite Chippings | 1 12 0 |

NOTE.—Sacks are charged 1s. 9d. each and credited 1s. 6d. if returned in good condition within three months carr. pd.

Stourbridge Fireclay in s'cks 37s. 0d. per on at rly. dp

## STONE.

| | s. d. |
|---|---|
| BATH STONE.—Delivered in railway trucks at Westbourne Park, Paddington, G.W.R., or South Lambeth, G.W.R., per ft. cube | 2 10 |
| PORTLAND STONE.— | |
| Brown Whitbed, in random blocks of 20 ft. average, delivered in railway trucks at Nine Elms, L. & S.W.R., South Lambeth Station, G.W.R., and Westbourne Park, Paddington, G.W.R., per ft. cube | 4 4½ |
| Do. do. delivered on road wagons at above stations, per ft. cube | 4 5½ |
| White basebed, 3d. per ft. cube extra. | |
| NOTE.—1d. per ft. cube extra for every foot over 20 ft. *average*, and ½d. beyond 30 ft. | |
| HOPTON-WOOD STONE— | |
| Delivered at any Goods Station, London. | s. d. |
| Random blocks from 10 ft. and over P. ft. cb. | 17 0 |
| Sawn two sides " | 27 0 |
| Sawn three or four sides " | 32 0 |
| YORK STONE, BLUE—*Robin Hood Quality.* | |
| Delivered at any Goods Station, London. | |
| 6 in. sawn two sides landings to sizes (under 30 ft. super) Per ft. super | 5 6 |
| 6 in. rubbed two sides, ditto " | 6 6 |
| 3 in. sawn two sides slabs (random sizes) " | 2 3½ |
| 2 in. to 2½ in. sawn one side slabs (random sizes) " | 1 6½ |
| 1½ in. to 2 in. ditto, ditto " | 1 4 |
| HARD YORK— | |
| Delivered at any Goods Station, London. | |
| Scappled random blocks Per ft. cube | 6 3 |
| 6 in. sawn two sides landing to sizes (under 40 ft. super) Per ft. super | 5 1½ |
| 6 in. rubbed two sides, ditto " | 6 1½ |
| 4 in. sawn two sides slabs (random sizes) " | 2 10 |
| 3 in. ditto ditto " | 2 1½ |
| 2 in. self-faced random flags .. Per yd. super | 9 0 |

## CAST STONE.

Delivered in London area in full-van loads, per ft. cube :—Plain, 8s. 6d.; Moulded, 9s. 6d.; Cills, 10s. 0d.

## WOOD.

GOOD BUILDING DEAL.

| Inches. | per stan. | Inches. | per stan. |
|---|---|---|---|
| 4 × 11 | £28 0 | 3 × 6 | £21 0 |
| 4 × 9 | 25 0 | 3 × 11 | 25 0 |
| 4 × 8 | 24 0 | 2 × 11 | 25 0 |
| 4 × 7 | 23 0 | 3 × 9 | 24 0 |
| 3 × 8 | 21 0 | 2½ × 9 | 23 0 |
| 3 × 7 | 20 0 | 3 × 4½ | 22 0 |
| 2½ × 7 | 20 0 | 3 × 4 | 22 0 |

PLANED BOARDS.

| | | | |
|---|---|---|---|
| 1 × 11 | £27 0 | 1 × 9 | 26 0 |

### PLAIN EDGE FLOORING.

| Inches | per sq. | Inches | per sq. |
|---|---|---|---|
| ¾ | 20/- | 1½ | 31/- |
| ¾ | 22/- | 1¾ | 34/- |
| 1 | 25/- | | |

### TONGUED AND GROOVED FLOORING

| Inches. | per sq. | Inches. | per sq. |
|---|---|---|---|
| 1 | 25/- | ¾ | 16/6 |
| 1¼ | 31/- | ¾ | 19/- |
| 1½ | 34/- | 1 | 24/- |

### BATTENS.

| Inches. | s. d. |
|---|---|
| ¾ × 2 | 2 6 per 100 ft. |

### SAWN LATHS.

| | |
|---|---|
| Per bundle | 0 2 4 |

### 1" AND UP THICK.

| | £ s. d. | | £ s. d. |
|---|---|---|---|
| Dry Austrian Wainscot, per ft. cube | 0 16 0 | to | 0 18 0 |
| Dry American and/or Japanese Figured Oak, ft. cube | 0 15 0 | to | — |
| Dry American and/or Japanese Plain Oak, ft. cube | 0 11 0 | to | 0 13 0 |
| Dry sq. edged Honduras Mahogany, ft. cube | 0 16 0 | to | 0 18 0 |
| Dry Log cut Honduras Mahogany, ft. cube | 0 18 0 | to | 1 1 0 |
| Dry Cuba Mahogany, ft. cube | 1 4 0 | to | 1 10 0 |
| Dry Teak, ft. cube | 0 13 0 | to | 0 15 0 |
| Dry American Whitewood, ft. cube | 0 11 0 | to | 0 14 0 |
| Best Scotch glue, per cwt. | 4 10 0 | to | — |
| Liquid Glue, per cwt. | 4 7 0 | to | 5 10 0 |

## SLATES.

First quality slates from Bangor or Portmadoc carriage paid in full truck loads to London Rate Station. Per 1,000.

| | £ s. d. | | £ s. d. |
|---|---|---|---|
| 24 by 12 | 32 18 4 | 18 by 10 | 18 12 11 |
| 22 by 12 | 29 17 11 | 18 by 9 | 16 9 2 |
| 22 by 11 | 27 14 2 | 16 by 10 | 15 12 6 |
| 20 by 12 | 26 5 0 | 16 by 8 | 12 3 9 |
| 20 by 10 | 22 10 0 | | |

## TILES.

Delivered at London rate stations in full truckloads of not less than 4 tons. Per 1,000 f.o.r. London.

| | |
|---|---|
| Best machine-made tiles from Broseley or Staffordshire district | 5 12 0 |
| ditto hand-made ditto | 5 17 6 |
| Ornamental ditto | 6 2 6 |
| Hip and valley tiles (per dozen) { Hand-made | 0 9 6 |
| Hip and valley tiles (per dozen) { Machine-made | 0 9 0 |

## METALS.

| JOISTS, GIRDERS, &c., TO LONDON STATION, PER TON— | £ s. d. |
|---|---|
| R.S. Joists, cut and fitted | 12 10 0 |
| Plain Compound Girders | 14 10 0 |
| " Stanchions | 16 10 0 |
| In Roof Work | 19 10 0 |

### MILD STEEL ROUNDS.

To London Station, per ton.

| Diameter. | £ s. d. | Diameter. | £ s. d. |
|---|---|---|---|
| ¼ in. | 12 0 0 | ⅜ in. to ½ in. | 10 15 0 |
| ⅛ in. | 11 0 0 | ⅝ in. to 2½ in. | 10 10 0 |

WROUGHT-IRON TUBES AND FITTINGS—

(Discount off List for lot of not less than £7 net value delivered direct from Works, 2½ per cent. less above gross discounts, carriage forward, if sent from London Stocks.)

| | Tubes. | Fittings Over ½" | Flanges Over ½" |
|---|---|---|---|
| Black Gas | 67½% | 45% | 55% |
| Galvanised Gas | 52½% | 35% | 45% |
| Blue Water | 62½% | 40% | 50% |
| Galvanised Water | 46½% | 30% | 40% |
| Red Steam | 57½% | 35% | 45% |
| Galvanised Steam | 40 % | 25% | 35% |

C.I. HALF-ROUND GUTTERS—London Prices ex Works

| Per yd. in 6 ft. lengths. | Gutters. | Angles and Nozzles. | Stop Ends. |
|---|---|---|---|
| 3 in. | 1/3½ | 11½d. | 3½d. |
| 3½ in. | 1/4½ | 1/1½ | 3½d. |
| 4 in. | 1/6 | 1/3 | 3½d. |
| 4½ in. | 1/7½ | 1/4½ | 4½d. |
| 5 in. | 1/10½ | 1/6½ | 5½d. |

O.G. GUTTERS.

| | | | |
|---|---|---|---|
| 3 in. | 1/8 | 1/4½ | 3½d. |
| 3½ in. | 1/8 | 1/4½ | 3½d. |
| 4 in. | 1/9½ | 1/4½ | 3½d. |
| 4½ in. | 1/11½ | 1/7½ | 4½d. |
| 5 in. | 2/4½ | 1/10½ | 5½d. |

RAIN-WATER PIPES, &c.

| per yd. in 6 fts. | Pipe. | Bends, stock angles. | Branches, stock angles. |
|---|---|---|---|
| 2 in. plain | 1/10½ | 1/3 | 1/9½ |
| 2½ in. " | 2/0½ | 1/4½ | 2/1½ |
| 3 in. " | 2/6 | 1/9 | 2/7½ |
| 3½ in. " | 2/11½ | 2/0½ | 3/0½ |
| 4 in. " | 3/5 | 2/6½ | 3/8½ |

L.C.C. COATED SOIL PIPES—London Prices ex Works

| | Pipe. | Bends, stock angles. | Branches, stock angles. |
|---|---|---|---|
| | s. d. | s. d. | s. d. |
| 2 in. per yd. in 6 fts. plain | 3 3 | 2 4½ | 2 10 |
| 2½ in. " | 3 9 | 2 7½ | 3 7 |
| 3 in. " | 4 6 | 2 10 | 4 2½ |
| 3½ in. " | 4 11½ | 3 7 | 4 11½ |
| 4 in. " | 5 5½ | 4 0½ | 5 9 |

L.C.C. COATED DRAIN PIPES—London Prices ex Works.

| | Pipe. | Bends, stock angles. | Branches, stock angles. |
|---|---|---|---|
| | s. d. | s. d. | s. d. |
| 3 in. per yd. in 9ft. lengths | 4 4 | 5 1 | 8 0½ |
| 4 in. " " | 6 2 | 5 8 | 10 0 |
| 5 in. " " | 7 2 | 10 10 | 17 1 |
| 6 in. " " | 8 6 | 13 2 | 21 9 |

Gasken for jointing, 38/6 per cwt.

| | Per ton in London. £ s. d. | £ s. d. |
|---|---|---|
| IRON— | | |
| Common bars | 13 0 0 | to 14 10 0 |
| Staffordshire Crown Bars— | | |
| Good merchant quality | 14 5 0 | to 15 15 0 |
| Staffordshire Marked Bars | 16 5 0 | .. 17 5 0 |
| Mild Steel Bars | 10 0 0 | .. 11 0 0 |
| Steel Bars, Ferro-Concrete quality, basis price | 10 0 0 | .. 11 0 0 |
| Hoop iron, basis price | 12 0 0 | .. 13 0 0 |
| " Galvanised | 27 0 0 | .. 28 0 0 |
| Soft Steel Sheets, Black— | | |
| Ordinary sizes to 20 g. | 13 5 0 | .. 14 5 0 |
| " " " 24 g. | 14 5 0 | .. 15 5 0 |
| " " " 26 g. | 16 5 0 | .. 17 5 0 |
| Sheets Flat Best Soft Steel, C.R. and C.A. quality— | | |
| Ordinary sizes, 6 ft. by 2 ft. to 3 ft. to 20 g. | 15 10 0 | .. 16 10 0 |
| Ordinary sizes, 6 ft. by 2 ft. to 3 ft. to 22 g. and 24 g. | 16 10 0 | .. 17 10 0 |
| Ordinary sizes, 6 ft. by 2 ft. to 3 ft. to 26 g. | 18 10 0 | .. 20 10 0 |

No 1 quality £4 per ton extra.

| | | | |
|---|---|---|---|
| Flat and Galvanised Corrugated Sheets— | | | |
| Ordinary sizes, 6 ft. to 9 ft. to 20 g. | 18 0 0 | .. | 19 0 0 |
| Ordinary sizes, 6 ft. to 9 ft. to 22 g. and 24 g. | 18 10 0 | .. | 19 10 0 |
| Ordinary sizes 6 ft. to 9 ft. to 26 g. | 21 10 0 | .. | 22 10 0 |
| Sheets Galvanised Flat, Best quality— | | | |
| Best Soft Steel Sheets, 6 ft. by 2 ft. to 3 ft. to 20 g. and thicker | 22 0 0 | .. | 23 0 0 |
| Best Soft Steel Sheets, 22 g. and 24 g. | 24 0 0 | .. | 26 0 0 |
| Best Soft Steel Sheets, 26 g. | 25 10 0 | .. | 26 10 0 |
| Cut Nails, 3 in. to 6 in. | 19 0 0 | | |

(Under 3 in. usual trade extras.)

METAL WINDOWS.—Standard sizes, suitable for complete houses, including all fittings, painting two coats, and delivery to job, average price about 1s. 4d. to 1s. 7d. per foot super.

## LEAD, &c.

| (Delivered in London.) | £ s. d. |
|---|---|
| LEAD—Sheet, English, 4 lb. and up | 29 10 0 |
| Pipe in coils | 30 0 0 |
| Soil pipe | 33 0 0 |
| Compo Pipe | 31 10 0 |

NOTE.—Country delivery, 20s. per ton extra; lots under 3 cwt. 3s. per cwt. extra, and over 3 cwt. and under 5 cwt., 1s. 6d. per cwt. extra. Cut to size 5s. cwt. extra.

| | |
|---|---|
| Oil lead, ex London area, at Mills per ton | 19 15 0 |

## COPPER.

| | s. d. |
|---|---|
| Seamless Copper tubes (basis) per lb. | 1 0½ |
| Strong sheet " | 1 0 |
| Thin " | 1 1 |
| Copper nails " | 2 3 |
| Copper wire " | 2 4 |

### PLUMBERS' BRASS WORK.

Delivered in London.

NEW RIVER PATTERN SCREW DOWN BIB COCKS FOR IRON.

| ½ in. | ¾ in. | 1 in. | 1¼ in. | 1½ in. | 2 in. |
|---|---|---|---|---|---|
| 29/- | 45/- | 76/- | 153/- | 246/- | 510/- per doz. |

NEW RIVER PATTERN SCREW DOWN STOP COCKS AND UNIONS.

| ½ in. | ¾ in | 1 in. | 1¼ in. | 1½ in. | 2 in. |
|---|---|---|---|---|---|
| 41/6 | 62/- | 92/- | 174/- | 300/- | 588/- per doz. |

RIVER PATTERN SCREW DOWN MAIN FERRULES.

| ½ in. | ¾ in. | 1 in. |
|---|---|---|
| 39/6 | 60/- | 116/6 per doz. |

CAPS AND SCREWS.

| 1¼ in. | 1½ in. | 2 in. | 3 in. | 3½ in. | 4 in. |
|---|---|---|---|---|---|
| 7/6 | 10/- | 14/- | 23/- | 30/- | 42/- per doz. |

DOUBLE NUT BOILER SCREWS.

| ½ in. | ¾ in. | 1 in. | 1¼ in. | 1½ in. | 2 in. |
|---|---|---|---|---|---|
| 7/6 | 11/- | 17/- | 29/- | 36/- | 63/- per doz. |

BRASS SLEEVES.

| 1¼ in. | 2 in. | 3 in. | 3½ in. | 4 in. |
|---|---|---|---|---|
| 10/- | 12/- | 20/- | 24/- | 31/- per doz. |

NEW RIVER PATTERN CROYDON BALL VALVES. S.F.

| ½ in. | ¾ in. | 1 in. | 1¼ in. | 1½ in. |
|---|---|---|---|---|
| 35/- | 56/- | 98/- | 162/- | 228/- per doz. |

DRAWN LEAD P. & S. TRAPS WITH BRASS CLEANING SCREW.

| | 1¼ in. | 1½ in. | 2 in. | 3 in. |
|---|---|---|---|---|
| 8 lbs. P. traps | 33/- | 41/- | 56/- | 101/- per doz. |
| 8 lbs. S. traps | 35/- | 45/- | 66/- | 126/- " |

TIN.—English Ingots, 3/1 per lb. SOLDER.—Plumber's 1/3, Tinmen's 1/6. Blowpipe 1/7 per lb.

## PAINTS, &c.

| | | | s. d. |
|---|---|---|---|
| Raw Linseed Oil, in pipes | per gallon | 0 | 2 11 |
| " " " in barrels | " | 0 | 3 1 |
| " " " in drums | " | 0 | 3 3 |
| Boiled " " in barrels | " | 0 | 3 3 |
| " " " in drums | " | 0 | 3 6 |
| Turpentine in barrels | " | 0 | 3 3 |
| " in drums (10 gall.) | " | 0 | 3 5 |
| Genuine Ground English White Lead, per ton (In not less than 5 cwt. casks.) | | 43 | 15 0 |

GENUINE WHITE LEAD PAINT—

"Father Thames," "Nine Elms," "Park," "Supremus," "St. Paul's," "Morganswyte," "Polacco," "J." Brand and other best brands (in 14 lb. tins) not less than 5 cwt. lots per ton delivered 63 5 0

| | | |
|---|---|---|
| Red Lead, Dry (packages extra) | per ton | 35 10 0 |
| Best Linseed Oil Putty | per cwt. | 0 15 0 |
| Filicol | " | 0 15 6 |
| Size. . XD quality | fkn. | 0 3 6 |

(*Continued on p. 799.*)

* The information given on this page has been specially compiled for THE BUILDER and is copyright. The aim in this list is to give, as far as possible, the *average* prices of materials, not necessarily the highest or lowest. Quality and quantity obviously affect prices—a fact which should be remembered by those who make use of this information.

## PRICES CURRENT OF MATERIALS (*contd.*

### GLASS.

ENGLISH SHEET GLASS IN CRATES OF STOCK SIZES.

| | Per ft. | | Per ft. |
|---|---|---|---|
| 15 oz. fourths .. | 2½d. | 32 oz. fourths ..... | 6½d. |
| 15 „ thirds .. | 3½d. | 32 „ thirds ..... | 9½d. |
| 21 „ fourths .. | 4d. | Obscured Sheet, 15 oz. | 3½d. |
| 21 „ thirds .. | 4½d. | „ „ 21 „ | 4½d. |
| 26 „ fourths .. | 4½d. | Fluted 15 oz. 6½d., 21oz. 9d. | |
| 26 „ thirds .. | 6½d. | En'lled 15 oz. 4½d., 21oz. 6½d. | |

Extra price according to size and substance for squares cut from stock.

ENGLISH ROLLED PLATE IN CRATES OF STOCK SIZES.

| | Per ft. |
|---|---|
| ⅛ Rolled plate ..... | 4½d. |
| ⅜ Rough rolled ..... | 5½d. |
| ½ Rough rolled ..... | 5½d. |
| Figured Rolled, Baltic, Oceanic, Arctic Stippolyte, and small and large Flemish White | 6d. |
| Ditto, tinted ..... | 8½d. |
| Rolled Sheet ..... | 5½d. |
| White Rolled Cathedral ..... | 5½d. |
| Tinted do. ..... | 7½d. |

Cast plate is same price as rough rolled.

### VARNISHES, &c.

| | | Per Gallon, £ s. d. |
|---|---|---|
| Oak Varnish ..... | Inside | 0 14 0 |
| Fine ditto ..... | ditto | 0 16 0 |
| Fine Copal ..... | ditto | 0 18 0 |
| Pale Copal ..... | ditto | 1 0 0 |
| Pale Copal Carriage ..... | ditto | 1 4 0 |
| Best ditto ..... | ditto | 1 12 0 |
| Floor Varnish ..... | Inside | 0 18 0 |
| Fine Pale Paper ..... | ditto | 0 18 0 |
| Fine Copal Cabinet ..... | ditto | 1 2 6 |
| Fine Copal Flatting ..... | ditto | 1 0 6 |
| Hard Drying Oak ..... | ditto | 0 18 0 |
| Fine Hard Drying Oak ..... | ditto | 0 19 0 |
| Fine Copal Varnish ..... | ditto | 1 0 0 |
| Pale ditto ..... | ditto | 1 2 0 |
| Best ditto ..... | ditto | 1 12 0 |
| Best Japan Gold Size ..... | | 0 12 6 |
| Best Black Japan ..... | | 0 10 6 |
| Oak and Mahogany Stain (water) ..... | | 0 12 0 |
| Brunswick Black ..... | | 0 7 6 |
| Berlin Black ..... | | 0 14 6 |
| Knotting (patent) ..... | | 1 5 0 |
| French and Brush Polish ..... | | 0 17 0 |
| Liquid Dryers in Terebine ..... | | 0 9 0 |
| Culrass Black Enamel ..... | | 0 7 0 |

### The National Federation of Building Trades Employers: Change of Title.

We are officially informed that the Federation has adopted a revised constitution and title which will operate as from January 1, 1928. On and after that date the correct full title of the Federation will be "The National Federation of Building Trades Employers," the words "of Great Britain and Ireland" being omitted.

# THE SCOTTISH BUILDER

## HOUSING PROGRESS IN SCOTLAND

The following figures show the progress that has been made in State-aided housing schemes in Scotland to October 31, 1927.

| | Completed. | Under Construction. |
|---|---|---|
| 1919 Act ... ... ... | 25,544 | 6 |
| Private subsidy schemes (1919 Additional Powers Act) .. ... ... | 2,324 | — |
| Slum clearance schemes ... | 6,147 | 3,136 |
| 1923 Act:— | | |
| By local authorities ... | 3,779 | 226 |
| By private enterprise ... | 11,115 | 2,679 |
| 1924 Act:— | | |
| By local authorities .. | 14,938 | 12,444 |
| By private enterprise .. | 336 | 186 |
| Demonstration houses ... | 17 | — |
| Steel houses erected on behalf of Government by Scottish National Housing Company ... .. ... | 1,989 | 553 |
| | 66,189 | 13,232 |

## NEW BUILDINGS IN SCOTLAND

**Barthol-Chapel.** — SCHOOL. — Tenders are being invited by the Aberdeenshire Education Authority for a new school at Barthol-Chapel. Mr. G. Watt, of 214, Union-street, Aberdeen, is the architect.

**Edinburgh.**—RECONSTRUCTION.—The Edinburgh Corporation's Plans and Works Committee have received a report by the City Architect, Mr. E. J. MacRae, and by Mr. F. C. Mears, F.R.I.B.A., regarding the proposed reconstruction of Huntly House, Canongate, as a city museum. The cost of the reconstruction is estimated at nearly £10,000.

**Glasgow.**—SLUM CLEARANCES.—The Housing Committee recommend the Corporation to proceed with slum clearance schemes involving 1,166 houses in the central, northern, and eastern districts of the city.

**Loanhead.**—HOUSES.—Tenders are being invited by the Town Council for the erection of 40 three-roomed houses of the flatted type as an extension of the existing scheme in Kennington-avenue. Mr. Geo. B. Deas, architect, Central-chambers, Kirkcaldy, has prepared the plans.

**Leith.**—TOWN HALL.—Working plans for the proposed town hall and library to be erected in Leith have been submitted to a meeting of the Lord Provost's Committee of Edinburgh Town Council yesterday. The plans embody some slight modification of the design submitted by Messrs. Bradshaw, Gass and Hope, and the Committee has instructed the City Architect to arrange for obtaining tenders at an early date.

**Innerleithen.**—HOUSES.—The Town Council are inviting tenders for the erection of 28 flatted houses in blocks of four. Mr. J. C. Miller, Burgh Surveyor, has prepared the plans.

**Tranent.** — CHURCH. — Plans have been passed by the Dean of Guild Court for the erection of a new Roman Catholic church. The new church, which will accommodate 500, is to be erected on a site not far from the present church.

**Edinburgh.**—BUILDINGS. — The Edinburgh Dean of Guild Court has granted warrants for the following:—sports pavilion each for Mr. F. R. Graham Yooll, at the Marine Gardens, Portobello, and for the East of Scotland Junior Football Association at Clockmill-road; Messrs. Topping & Co.—three garages at Campbell avenue; Mr. George Young—hall and house at Westfield-avenue; Mr. George S. Peat—seven houses and six garages at Lady-road; Mr. W. H. Wainwright and another — 12 flatted villas and 17 garages at Greenbank-avenue.

**Glasgow.**—SCHOOL.—As the new Bankhead housing scheme is nearing completion the Glasgow Education Authority is making an effort to provide school accommodation in the district.

**Glasgow.**—HOUSES.—The Glasgow Dean of Guild Court granted the following:—Mr. A. M'Lellan—22 dwelling-houses of five apartments at Merrylee-road, Netherauld House-road, Newlands; Corporation Parks Department — tennis pavilion at Queen's-drive; Messrs. Mactaggart & Mickel, Ltd.—74 dwelling-houses of four apartments each at Meikle, Aikenhead.

**Falkirk.**—HOUSING.—The Dean of Guild Court has granted warrant to erect 96 houses at the Camelon House grounds at an estimated cost of £28,300.

**Dunfermline.**—ADDITIONS.—Tenders have been accepted by the Carnegie Trustees for alterations and additions to Bandrum House. Mr. R. H. Motion, of 102, High-street, Dunfermline, is the architect.

**Doune.**—LIBRARY.—Mr. James M. Thomson, a native of Doune, Perthshire, at his death in Hartford, Connecticut, U.S.A., bequeathed the sum of 5,000 dollars in trust to his executors for the purpose of establishing a free public library. The Town Council propose to convene a meeting of the local public authorities to consider what action should be take in the matter.

### Obituary.

The death has occurred, at 187, Forest-avenue, Aberdeen, of Mr. William Matthew, builder, aged 75 years.

## BUILDING TRADE WAGES IN SCOTLAND.*

**THE following are the present rates of wages in the building trade in the principal towns of Scotland. Every endeavour is made to ensure accuracy, but we cannot be responsible for errors that may occur:—**

| | Masons. | Bricklayers. | Carpenters, Joiners. | Plasterers. | Slaters. | Plumbers. | Painters. | Labourers—Masons', Bricklayers', Plasterers'. |
|---|---|---|---|---|---|---|---|---|
| Aberdeen ..... | 1/8 | 1/8½ | 1/8 | 1/8 | 1/8 | 1/8 | 1/7 | 10½d to 1/1 |
| Airdrie ..... | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | — | 1/6½ | 1/3 |
| Alexandria ..... | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | — | 1/2½ to 1/8½ |
| Arbroath ..... | 1/7 | 1/7 | 1/7 | 1/7½ | 1/7 | 1/7 | 1/5½ | 1/1½ |
| Ayr ..... | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/6½ | 1/3 |
| Bathgate ..... | 1/8 | 1/8 | 1/8 | 1/8½ | 1/8 | 1/8 | 1/6½ | 1/2 to 1/3 |
| Blairgowrie ..... | 1/7 | 1/7 | 1/7 | 1/7½ | 1/5 | 1/7 | 1/4 | 10d. to 1/- |
| Bo'ness ..... | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/3 |
| Coatbridge ..... | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | — | 1/6½ | 1/3½ |
| Dumbarton ..... | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/3½ |
| Dumfries ..... | 1/7 | 1/7 | 1/7 | 1/7 | 1/7 | 1/7 | 1/7 | 1/2½ |
| Dundee ..... | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/3 |
| Dunfermline ..... | 1/8 | 1/8 | 1/8 | 1/9 | 1/8 | 1/8 | 1/8 | 1/3½ |
| Edinburgh ..... | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/3½ |
| Falkirk ..... | 1/7½ | 1/7½ | 1/7 | 1/8 | 1/7 | 1/7 | 1/6½ | 1/2½ |
| Fort William ..... | 1/6 | 1/6 | 1/6 | 1/6 | 1/6 | 1/6 | 1/6 | 1/2 |
| Galashiels ..... | 1/7 | 1/7 | 1/7 | 1/7 | 1/7 | 1/7 | 1/7 | 1/2½ |
| Glasgow ..... | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/3½ |
| Greenock ..... | 1/8 | 1/8 | 1/8 | 1/9 | 1/8 | 1/8 | 1/7 | 1/0½ to 1/3½ |
| Hamilton ..... | 1/8 | 1/8 | 1/8 | 1/9 | 1/8 | 1/8 | 1/6½ | 1/3½ |
| Hawick ..... | 1/7 | 1/7 | 1/7 | 1/7-1/7½ | 1/7 | 1/7 | 1/7 | 1/2½ |
| Helensburgh ..... | 1/8 | 1/8 | 1/8 | 1/9 | 1/8 | 1/8 | 1/7 | 1/3½ |
| Inverness ..... | 1/6 | 1/6 | 1/6 | 1/6 | 1/6 | 1/6 | 1/6 | 1/- to 1/2 |
| Kilmarnock ..... | 1/8 | 1/8 | 1/8 | 1/9 | 1/8 | 1/8 | 1/8 | 1/3½ |
| Kirkcaldy ..... | 1/8 | 1/8 | 1/8 | 1/9 | 1/8 | 1/8 | 1/8 | 1/3½ |
| Kirkwall ..... | 1/5 | 1/5 | 1/4 | 1/5 | 1/5 | 1/4 | 1/4 | 1/- |
| Lanark ..... | 1/8 | 1/8 | 1/8 | 1/9 | 1/8 | 1/8 | 1/6 | 1/- to 1/2 |
| Leith ..... | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/8 | 1/3½ |
| Motherwell ..... | 1/8 | 1/8 | 1/8 | 1/9 | 1/8 | 1/8 | 1/6½ | 1/3½ |
| Perth ..... | 1/8 | 1/8 | 1/8 | 1/9 | 1/8 | 1/8 | 1/6½ | 1/3 |
| Stirling ..... | 1/8 | 1/8 | 1/8 | 1/9 | 1/8 | 1/8 | 1/8 | 1/3½ |
| Stirlingshire (Eastern District) | 1/8-1/10 | 1/8-1/10 | 1/8 | 1/9 | 1/7 | 1/8 | 1/6½ | 1/3½ |
| Wishaw ..... | 1/8 | 1/8 | 1/8 | 1/9 | 1/8 | 1/8 | 1/7 | 1/3½ |

* The information given in this table is copyright. The rates of wages in the various towns in England and Wales are given on page 877.

# CURRENT PRICES FOR BUILDING WORK IN LONDON*

## EXCAVATOR.

| | | s. | d. |
|---|---|---|---|
| Digging and throwing or wheeling and filling carts, and carting away to shoot—6 ft. deep | per yard cube | 11 | 0 |
| Add if in clay | ,, ,, | 1 | 0 |
| Add for every additional depth of 6 ft. | ,, ,, | 0 | 6 |
| Planking and strutting to trenches | per foot super | 0 | 5 |
| Do. to sides of excavation, including shoring | ,, ,, | 1 | 0 |

## CONCRETOR.

| | | | |
|---|---|---|---|
| Portland cement concrete in foundation 1 to 6 | per yard cube | 38 | 0 |
| Add if in underpinning in short lengths | ,, ,, | 7 | 0 |
| Add if in floors 6 in. thick | ,, ,, | 3 | 3 |
| Add if in beams | ,, ,, | 3 | 9 |
| Add if aggregate 1 : 2 : 4 | ,, ,, | 10 | 0 |
| Add for hoisting not exceeding 10 ft. beyond the first 10 ft. | ,, ,, | 2 | 6 |

## BRICKLAYER.

| | | £ | s. | d. |
|---|---|---|---|---|
| Reduced brickwork in lime mortar and Fletton bricks | per rod | 32 | 0 | 0 |
| Add if in stocks | ,, | 7 | 10 | 0 |
| Add if in Staffordshire blues | ,, | 22 | 0 | 0 |
| Add if in Portland cement and sand | ,, | 1 | 10 | 0 |

### FACINGS.

| | | | | |
|---|---|---|---|---|
| Extra for facing in English or Flemish bond for every 10s. per 1,000 over the price of the common bricks | per ft. super | 0 | 0 | 1¼ |

### POINTING.

| | | | | |
|---|---|---|---|---|
| Neat flat struck or weathered joint | ,, ,, | 0 | 0 | 3 |

### ARCHES.

Extra only to the price of ordinary brickwork :—

| | | | | |
|---|---|---|---|---|
| Fair external in half brick rings | ,, ,, | 0 | 0 | 10 |
| Axed in stocks | ,, ,, | 0 | 1 | 9 |
| Rubbed and gauged jointed in putty camber or segmental | ,, ,, | 0 | 6 | 0 |

### SUNDRIES.

| | | | | |
|---|---|---|---|---|
| Damp course in double course of slates breaking joint and bedded in Portland cement | ,, ,, | 0 | 1 | 0 |
| Setting ordinary register grates and stoves | each | 1 | 0 | 0 |
| Setting kitchener, including forming flues, &c., with all necessary fire bricks | ,, | 4 | 15 | |

## ASPHALTER.

| | | s. | d. |
|---|---|---|---|
| Half-inch horizontal damp course | per yard super | 4 | 6 |
| Three-quarter-inch vertical damp course | ,, ,, | 9 | 6 |
| Three-quarter-inch on flats in two thicknesses | ,, ,, | 6 | 3 |
| Angle fillet | per foot run | 0 | 3 |
| Skirting and fillet 6 in. high | ,, ,, | 1 | 2 |

## MASON.

| | | | |
|---|---|---|---|
| York stone templates fixed | per foot cube | 13 | 0 |
| York stone sills fixed | ,, ,, | 22 | 0 |
| Bath stone and all labour fixed | ,, ,, | 10 | 6 |
| Portland stone fixed | ,, ,, | 20 | 0 |

## SLATER.

| | | | |
|---|---|---|---|
| Welsh 16 in. × 8 in. 3 in. lap, including nails | per square | 72 | 9 |
| Do. 20 in. × 10 in. Do. Do. | ,, | 80 | 9 |
| Do. 24 in. × 12 in. Do. Do. | ,, | 90 | 0 |

## CARPENTER AND JOINER.

| | | | | |
|---|---|---|---|---|
| Fir framed in plates | per foot cube | 5 | 0 | |
| Do. joists | ,, ,, | 5 | 6 | |
| Do. roofs, floors and partitions | ,, ,, | 6 | 0 | |
| Do. trusses | ,, ,, | 8 | 6 | |

| | ¾″ | 1″ | 1¼″ | 2″ |
|---|---|---|---|---|
| Deal rough close boarding, per sq. | 35/6 | 40/- | 45/- | 72/- |

| | | s. | d. |
|---|---|---|---|
| Flat centering for concrete floor, including struts or hangers | ,, | 50 | 0 |
| Do. to beams | per ft. sup. | 1 | 0 |
| Centre for arches | ,, | 1 | 6 |
| Gutter boards and bearers | ,, | 1 | 0 |

### FLOORING.

| | ¾″ | 1″ | 1¼″ | 1½″ |
|---|---|---|---|---|
| Deal-edges shot, per sq. | — | 44/6 | 53/- | 60/6 |
| Do. tongued and grooved, ,, | — | 49/- | 57/6 | 65/- |
| Do. matchings, ,, | 45/- | 51/- | — | — |
| Moulded skirting, including backings and grounds, per ft. sup. | 1/6 | 1/9 | 2/- | 2/6 |

### SASHES AND FRAMES.

| | | s. | d. |
|---|---|---|---|
| One-and-a-half moulded sashes or casements | per foot super | 1 | 10 |
| Two Do. Do. Do. | ,, ,, | 2 | 1 |
| Add for fitting and fixing | ,, ,, | 0 | 3 |
| Deal-cased frames with 1 in. inner and outer linings, 1½ in. pulley stiles tongued to linings, hard wood sills with 2 in. moulded sashes in squares, double hung, double hung with pulleys, lines and weights; average size | ,, ,, | 3 | 9 |

### DOORS.

| | 1¼″ | 1¾″ | 2″ |
|---|---|---|---|
| Two-panel square framed, per ft. sup. | 2/1 | 2/4 | 2/6 |
| Four-panel Do. ,, | 2/5 | 2/8 | 2/11 |
| Two-panel moulded both sides ,, | 2/8 | 2/11 | 3/2 |
| Four-panel Do. ,, | 2/11 | 3/2 | 3/5 |

## CARPENTER AND JOINER continued.

### FRAMES.

| | | s. | d. |
|---|---|---|---|
| Deal wrot moulded and rebated | per foot cube | 14 | 0 |

| | | 1″ | 1¼″ | 1½″ |
|---|---|---|---|---|
| Plain deal jamb linings framed | per ft. sup. | 1/7 | 1/8 | 1/11 |
| Deal shelves and bearers | ,, | 1/4 | 1/6 | 1/9 |
| Add if cross-tongued | ,, | 2d. | 2d. | 2d. |

### STAIRCASES.

| | 1″ | 1¼″ | 1½″ | 2″ | 2½″ |
|---|---|---|---|---|---|
| Deal treads and risers in and including rough brackets | 2/1 | 2/4 | 2/9 | — | — |
| Deal strings wrot on both sides and framed | 1/8 | 2/- | 2/2 | 2/8 | — |

| | | s. | d. |
|---|---|---|---|
| Housings for steps and risers | each | 0 | 11 |
| Deal balusters, 1 in. × 1½ in. | per ft. run | 0 | 9 |
| Mahogany handrail : average, 3 in. × 3 in. | ,, ,, | 6 | 0 |
| Add if ramped | ,, ,, | 12 | 0 |
| Add if wreathed | ,, ,, | 24 | 0 |

### FIXING ONLY IRONMONGERY (INCLUDING SCREWS).

| | | | |
|---|---|---|---|
| 6 in. barrel bolts | 8½d. | Rim locks | 2/- |
| Sash fasteners | 11½d. | Mortice locks | 4/6 |
| Casement fasteners | 1/5 | Patent spring hinges and letting into floor and making good | 19/- |
| Casement stays | 1/2 | | |
| Cupboard locks | 1/5 | | |

## FOUNDER AND SMITH.

| | | s. | d. |
|---|---|---|---|
| Rolled steel joists | per cwt. | 16 | 3 |
| Plain compound girders | ,, | 19 | 0 |
| Do. stanchions | ,, | 21 | 9 |
| In roof work | ,, | 27 | 6 |

## RAIN-WATER GOODS.

| | | 3″ | 4″ | 5″ | 6″ |
|---|---|---|---|---|---|
| Half-round plain rebated joints | ft. run | 1/6 | 1/9 | 2/- | 2/6 |
| Ogee Do. Do. | ,, | 1/9 | 2/- | 2/6 | 3/3 |
| Rain-water pipes with ears | ,, | 1/9 | 2/7 | — | — |
| Extra for shoes and bends | each | 4/4 | 5/11 | — | — |
| Do. stopped ends | ,, | 1/11 | 2/4½ | 3/7 | 4/- |
| Do. nozzles for inlets | ,, | 2/2 | 2/7 | 3/10 | 4/3 |

## PLUMBER.

| | | s. | d. |
|---|---|---|---|
| Milled lead and laying in flashings and gutters | per cwt. | 42 | 6 |
| Do. Do. in flats | ,, | 41 | 6 |
| Extra labour and solder in coated cesspools | each | 6 | 9 |
| Welf joint | per ft. run | 0 | 6 |
| Soldered seam | ,, ,, | 1 | 3 |
| Copper nailing | ,, ,, | 0 | 4 |

| | ½″ | ¾″ | 1″ | 1½″ | 2″ | 4″ |
|---|---|---|---|---|---|---|
| Drawn lead waste, per ft. run | 1/2 | 1/9 | 2/- | 3/4 | 4/- | — |
| Do. service ,, | 1/8 | 2/2 | 2/7 | 3/10 | — | — |
| Do. soil ,, | — | — | — | — | — | 6/9 |
| Bends in lead pipe each | — | — | — | — | 3/3 | 8/2 |
| Soldered stop ends ,, | 1/2 | 1/8 | 2/1 | 2/10 | 3/6 | — |
| Read lead joints ,, | 11d. | 1/- | 1/3 | 1/11 | 2/4 | 4/10 |
| Wiped soldered joints ,, | 2/10 | 3/6 | 4/- | 4/11 | 6/6 | 9–9 |
| Lead traps and cleaning screws ,, | — | — | — | 14/7 | 19/6 | — |
| Bib cocks and joints ,, | 6/4 | 9/7 | 15/4 | 41/- | — | — |
| Stop cocks and joints ,, | 15/4 | 17/2 | 25/8 | 64/- | — | — |

## PLASTERER.

| | | s. | d. |
|---|---|---|---|
| Render, float and set in lime and hair | per yard sup. | 2 | 6 |
| Do. Do. Sirapite | ,, ,, | 2 | 9 |
| Do. Do. Keen's | ,, ,, | 4 | 0 |
| Add saw lathing | ,, ,, | 1 | 7 |
| Add metal lathing | ,, ,, | 2 | 6 |
| (Not including hangers or runners, &c., for suspended ceilings.) | | | |
| Portland cement screed | ,, ,, | 2 | 2 |
| Do. plain face | ,, ,, | 3 | 3 |
| Mouldings in plaster | per 1 girth | 0 | 1¾ |
| One-and-a-half granolithic pavings | per yard sup. | 5 | 9 |

## GLAZIER.

| | | s. | d. |
|---|---|---|---|
| 21-oz. sheet plain | per foot sup. | 0 | 8½ |
| 26-oz. Do. | ,, ,, | 1 | 0 |
| Obscured sheet | ,, ,, | 1 | 1 |
| ⅛-in. rolled plate | ,, ,, | 0 | 9 |
| ¼-in. rough rolled or cast plate | ,, ,, | 0 | 10½ |
| ¼-in wired cast plate | ,, ,, | 1 | 4 |

## PAINTER.

| | | s. | d. |
|---|---|---|---|
| Preparing and distempering, 2 coats | per yard sup. | 0 | 9 |
| Knotting and priming | ,, ,, | 0 | 7 |
| Plain painting, 1 coat | ,, ,, | 0 | 9 |
| Do. 2 coats | ,, ,, | 1 | 2 |
| Do. 3 coats | ,, ,, | 1 | 9 |
| Do. 4 coats | ,, ,, | 2 | 4 |
| Graining | ,, ,, | 2 | 3 |
| Varnishing twice | ,, ,, | 1 | 9 |
| Sizing | ,, ,, | 0 | 3 |
| Flatting | ,, ,, | 0 | 7 |
| Enamel | ,, ,, | 1 | 1 |
| Wax polishing | per foot sup. | 0 | 6 |
| French polishing | ,, ,, | 1 | 2 |
| Preparing for and hanging paper | per piece, 2/- to 4/- | | |

*These prices apply to *new buildings only*. They cover superintendence by foreman and carry a profit of 10% on the prime cost without establishment charges. A percentage of 1½ should be added for Employers' Liability and National Health and Unemployments Acts and from 1s. 6d. per £100 for Fire Insurance. The whole of the information given on this page is copyright.

# TRADE NEWS

### Change of Address.

Messrs. Rhodes' Chains, Ltd., announce that on and after December 10 next their registered offices will be transferred to Faraday House, 8-10, Charing Cross-road, London, W.C. 2 (opposite the Alhambra), where they have secured commodious first-floor accommodation in the same building as their London Depot and Despatch Departments, a movement which will greatly increase facilities for giving prompt attention to customers' requirements.

### Business Amalgamation.

We are informed that the Morris Westminster Guild has acquired the architectural metal work and bronze foundry business of Messrs. J. W. Singer & Sons, Ltd., of Frome, Resulting upon this acquisition the following amalgamation has been accomplished :—the architectural metal works and bronze foundries of J. W. Singer & Sons, Ltd., and the Morris Art Bronze Foundry, the metal window works of the Morris Westminster Guild, the stained and leaded glass works of William Morris & Co. (Westminster), Ltd. The operations of these firms will henceforth be conducted under the name of the Morris-Singer Co., of London and Frome. Mr. William Morris will remain chairman and managing director of the company. Although inquiries addressed to the respective firms in Frome or London will receive attention, it is requested that all correspondence be directed to the Morris-Singer Co., Head Office, Morris House, Rochester-row, Westminster, London, S.W.1. Telephone: Victoria 6443 (3 lines).

### British Industries Fair, Birmingham.

Extensive additions are being made—so we learn—to the permanent buildings of the Heavy Section of the British Industries Fair in Birmingham. A third span is being added, which will give a total enlargement of floor area for the year of 115,000 sq. ft. The Fair is from February 20 to March 2, 1928

### The G.E.C. Bound Catalogue, 1927-28.

We have received a copy of the bound catalogue issued by the General Electric Co., Ltd., of Magnet House, Kingsway, W.C.2. The first electrical catalogue issued by the G.E.C., in 1888, when electricity was in its earliest stage of development, was regarded as a remarkable achievement. It was unique in that it embraced every electrical device which was at that date on the market. The present issue of this catalogue is unlike its predecessors in one respect, as, although it runs to nearly a thousand pages, it does not list in detail every item of the various ranges of G.E.C. products. At the same time, although it does not contain every item of the Company's manufacture, it *does* include representative examples of practically all the leading lines of G.E.C. electrical apparatus. There are examples of equipment for the largest generating stations and power-transmission systems, railway electrification, telephone exchanges and the like on one hand; and, on the other, Osram lamps, Magnet appliances, fittings, and the smallest electrical accessories.

The usefulness of such a catalogue to the contractor and the dealer cannot be overemphasised. Instead of a number of separate catalogue sections through which to search—and loose catalogues have a vexing habit of straying—there is provided a single volume which, on account of its size, could not well be lost sight of, even apart from its everyday value. It is, indeed, a medium which will serve constantly as a reference in quoting for every type of electrical accessory now manufactured, each item or appliance listed being briefly described and the price given in clear type. There is, in addition, an extensive glossary of technical terms, wiring tables and conversion tables, each of which can be taken as authoritative and dependable, and likely to be of service frequently. Three separate forms of wiring specification are also included, and these should be of very real assistance to the contractor called upon to draw up such a document at any time. Useful information supplementary to that appearing in the ordinary trade catalogue has always been a feature of G.E.C. bound catalogues, and this volume is in no way behind its predecessors in this respect.

### Valves and Fittings.

We acknowledge receipt of the October number of "Walworth Log," issued by the Walworth Company of New York, makers of valves, malleable fittings, die stocks, etc. There is some account of the American oil industry. From it we take the following paragraph :—"From a beginning as recent as 1859 the American oil industry has risen to a position second only to agriculture and transportation. Estimates of the capital invested in the oil business run as high as $11,000,000,000. The American Petroleum Institute placed the total world production of petroleum at 1,096,608,000 barrels. Of this amount the United States produced 775,000,000 barrels, or 70.7 per cent. of the total. Mexico was second with 8.2 per cent., Russia third with 5.5 per cent., and Venezuela fourth with 3.4 per cent. Since considerable crude oil from Mexico and South American countries is imported, it is safe to say that more than three-quarters of the world's oil industry is centred in the United States." The "Log" will gladly be sent upon application to 90-96, Union-street, S.E.1.

### Tilting-Type Concrete Mixer.

We have received details from the makers, Messrs. Marshall, Sons & Co., Ltd., Gainsborough, of the new Marshall-Benson concrete mixer. These designers have had more than 15 years' experience with various types of tilting-type mixers with the result that many weak points have been eliminated while several new features have been introduced. The mixing action of the machine is, we believe, very good, there being no possibility of separation of aggregate or of clogging of the bottom of the mixing bowl. The arrangement of the paddles ensures a thorough mix, a quick discharge, and a clean interior of the mixing bowl. The machine is extremely portable. The four wheels may be changed for direction in a few minutes, by the removal of certain pins, to convert the machine from end to side discharge. There is no jacking up, no removal of wheels, we learn. Speed and cleanliness of loading, mixing, and discharging are other factors responsible for economical running. Details may be obtained from the manufacturers.


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# TENDERS

**Communications for insertion under this heading should be addressed to "The Editor," and must reach him next week not later than Tuesday evening.**

- *** Denotes *accepted*.**
- **† Denotes *provisionally accepted*.**
- **‡ Denotes *recommended for acceptance*.**
- **§ Denotes *accepted subject to modifications*.**

**Aylesbury.**—Builders' work at Manor House, for the Bucks C.C. :—
‡Fleet & Roberts, Aylesbury ..... £1,214

**Belfast.**—Iron railings, gates and grilles at the new Museum and Art Gallery, Botanic Gardens park, for the C.B. :—
*R. J. McKinney, Belfast ..... £411 10 2

**Birkenhead.**—19 non-parlour type houses in Lair-street and Hoylake-road, for the Corporation. Mr. R. W. Johnson, Borough Engineer and Surveyor :—
*W. E. Hughes, Birkenhead ..... £8,141 0 0

**Bletchingly.**—Alterations and additions to "Coleharbour." Mr. H. H. Scott Willey, A.R.I.B.A., Architect :—
*R. Whitaker, Merstham.
*Steelwork*—
*Young & Co., London.

**Boherboy.**—Repairs to the dispensary residence, for the North Cork County Board of Public Assistance :—
*J. R. Moylan, Banteer ..... £265

**Bradford.**—Reconstruction of Hallfield Arcade shops and offices into a café and dance hall. Mr. Wm. Illingworth, Architect :—
*Builder*—
*F. Stanley.
*Joiners*—
*Gamble & Shapcott.
*Steelwork*—
*Hy. Barrett & Sons, Ltd.
*Asphalter*—
*Tunstalls Rock Asphalt Co., Ltd., Leeds.

**Buckinghamshire.**—Earthworks and fencing between the Colnbrook by-pass and the Slough Urban District boundary on the London—Bath road, for the C.C. :—
*G. Wimpey & Co., Ltd. ..... £8,257 10 1
(Subject to M.T. approval.)

**Burnham-on-Sea.**—Provision, laying and jointing of about 220 lin. yards, of 10-in. diameter cast-iron pipe rising main, together with by-passes, sluice valve chambers, foundations for pumping plant and other incidental works at Brent Knoll, also for the laying and jointing of about 57 lin. yards of 9-in. diameter cast-iron discharge main, the construction of a concrete storage tank, valve chambers and other incidental works, at Winscombe, for the U.D.C. Messrs. Willcox & Raikes, Engineers, 63, Temple-row, Birmingham :—

| | |
|---|---|
| Wm. Muirhead, Macdonald Wilson & Co., Ltd., London ..... | £3,555 19 6 |
| E. E. Jeavons & Co., Ltd., Tipton | 3,280 17 6 |
| E. G. Padfield, Son & Co., Ltd., Shepton Mallet ..... | 3,266 10 6 |
| Hussey, Egan & Pickmere, Birmingham ..... | 3,206 3 0 |
| Stephen Ambrose, Ltd., Bath ... | 3,159 0 0 |
| The Durnford Construction Co. (Bristol), Ltd., London ..... | 2,961 7 7 |
| Geo. Pollard & Co., Ltd., Taunton | 2,924 6 2 |
| *H. Middleton, Liss ..... | 2,899 8 4 |

**Clones.**—Reservoir in connection with the waterworks scheme, for the U.D.C. :—

| | |
|---|---|
| Grainger Bros., Holywood ..... | £11,168 18 8 |
| R. Boyd, Belfast ..... | 11,104 10 0 |
| McRoberts & Armstrong, Belfast | 10,723 3 4 |
| Stewart & Patterson, Belfast ... | 9,724 19 8 |
| McNally & Co., Dublin ..... | 8,400 0 0 |
| W. Lee (O'Toole and Lee), Arklow ..... | 7,543 6 6 |
| *Romney & Faris, Armagh ..... | 6,586 0 0 |

**Cork.**—New Carnegie public library on the Grand Parade. Messrs. O'Flynn & O'Connor, architects :—
*T. Kelleher, Cork ..... £18,871

**Coventry.**—Extension to the motor garage at Priestley's Bridge depôt, Stoney Stanton-road, for the T.C. Mr. T. R. Whitehead, General Manager and Engineer, Corporation Tramways and Motor Omnibus Department :—
*F. G. Robinson, Coventry ..... £6,960

**Coventry.**—Schools at Earlsdon, for Rev. J. B. Ryan, All Souls R.C. Church :—
*J. Y. Jones, Ltd., Coventry.

**Croydon.**—Borehole pump house, for the C.B. :—

| | |
|---|---|
| | £380 |
| W. H. Poulton ..... | 375 |
| Maides Bros. ..... | 347 |
| Truett & Steel, Ltd. ..... | 339 |
| E. J. Saunders ..... | 338 |
| E. H. Smith ..... | 311 |
| D. Waller ..... | 307 |
| *R. Mansell ..... | |

(All of Croydon.)

**Croydon.**—Two further blocks of flats in Upper Coombe-street, for the C.B.:—

| | | | |
|---|---|---|---|
| W. Hunt (London), Ltd., Croydon | 25,898 | 5 | 0 |
| Bessant Brown, Ltd., Raynes Park | 20,117 | 13 | 0 |
| H. T. Brisley, London | 19,063 | 11 | 9 |
| Gazes, Ltd., Kingston-on-Thames | 18,663 | 0 | 0 |
| Hill & Gurr, Bromley | 18,630 | 0 | 0 |
| Canonbury Construction Co., Ltd., London | 18,499 | 0 | 0 |
| Garlick (1910), London | 18,132 | 0 | 0 |
| Bridge & Co., Ltd., London | 17,989 | 0 | 0 |
| J. Smith & Sons, Ltd., South Norwood | 17,885 | 0 | 0 |
| R. Mansell, Croydon | 17,797 | 0 | 0 |
| E. H. Smith, Croydon | 17,775 | 0 | 0 |
| E. D. Winn & Co., London | 17,550 | 0 | 0 |
| Truett & Steel, Ltd., Thornton Heath | 17,288 | 0 | 0 |
| G. E. Everitt & Son, Ltd., Croydon | 17,152 | 0 | 0 |
| J. Elliman & Son, Ltd., Beckenham | 16,483 | 0 | 0 |
| *S. E. Moss, Southend-on-Sea | 16,143 | 0 | 0 |

**Doncaster.**—Settling tanks, percolating filters, humus tanks, sludge lagoons, effluent culvert, roads, etc., for the C.B. Mr. F. Oscar Kirby, Borough Engineer:—

*Edcaster, Ltd., Doncaster.

**Downpatrick.**—20 single and 68 double labourers' cottages, for the R.D.C. Mr. C. J. Love, Architect, 11, Chichester-street, Belfast:—

*James Miskimming & Son, Ltd., Belfast ..... £22,250

**Dublin.**—Out-patient department at "Teac Ultain," 37, Charlemont-street, for the Board. Mr. A. E. Smith, F.S.I., Chartered Quantity Surveyor, 5, St. Andrew-street:—

*M. O'Callaghan & Co., Dublin ... £4,100

**Durham.**—Tenders accepted for various works at schools, for the C.C. Mr. F. Willey, F.R.I.B.A., Architect, 34, Old Elvet, Durham:—

*Blackhall Colliery New Council*—
Steel & Co., Ltd., Sunderland, installation of low-pressure hot-water heating apparatus, £1,192 19s.

*Fishburn New Council*—
J. King, Ltd., Liverpool, installation of low-pressure hot-water heating apparatus, £325 2s

*Haverton Hill Council*—
Steel & Co., Ltd., Sunderland (a) installation of low-pressure hot-water heating apparatus (additional buildings), £194 15s.; (b) renewals and repairs to existing apparatus, etc., £155 11s. 8d.

*Rutherknowle Council*—
H. Eisel, Ltd., Coundon, additions and alterations, £3,244.

*West Herrington Council*—
W. Hall (Contractors), Ltd., Gateshead, additional classrooms, £939.

*Bishop Auckland Boys' Grammar*—
A. J. Vickers, Shildon, painting and renovation, £310 9s.

**Dublin.**—Painting work, Pigeon House-road Hospital, for the C.B.:—

| | | | |
|---|---|---|---|
| Keatinge & Sons | £485 | 0 | 0 |
| Jones & Sons | 459 | 15 | 0 |
| A. P. Watkinson | 458 | 10 | 9 |
| P. Watchorn & Sons | 416 | 0 | 0 |
| L. & J. Duff | 370 | 0 | 0 |
| *Jas. Daly | 360 | 0 | 0 |

**Dunfermline.**—Additions and alterations to Bandrum House, for the Carnegie Dunfermline trustees. Mr. R. H. Motion, Architect, 102, High-street:—

*Brickwork*—
*J. Baxter & Son.

*Joiner Work*—
*G. Crawford & Son.

*Plumber Work*
*J. Inglis & Son.

*Plaster Work*—
*J. Paris & Son.

*Slater Work*—
*J. Robertson & Son.

*Water Mains*—
*James Mackay.

*Electric Lighting*—
*J. Scott & Co.

*Glazier Work*—
*Alex. Lowe.

(All of Dunfermline.)

**Eastleigh and Bishopstoke.**—Erection of 131 houses, being first instalment of a scheme for 264 houses on the Council's housing site, Derby-road, for the U.D.C. The work comprises six types of houses and three different methods of facing. Twenty-seven firms tendered. No tender has yet been accepted. As the list is too long to publish we are giving the names of those who tendered and the amounts of the lowest, i.e., Messrs. M. Venning & Sons, Cardiff:—

| | Brick faced. £ s. | Concrete block. £ s. | Bk. dado. & R'cast. £ s. |
|---|---|---|---|
| "G" pair ..... | 710 0 ... | 720 0 ... | 718 0 |
| "H" " ..... | 694 8 ... | 704 8 ... | 702 8 |
| "J" " ..... | 694 16 ... | 704 16 ... | 702 16 |
| "K" " ..... | 700 0 ... | 710 0 ... | 708 0 |
| "L" three ... | 1,050 0 ... | 1,065 0 ... | 1,062 0 |
| "M" four ..... | 1,369 4 ... | 1,389 4 ... | 1,385 4 |

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**Fareham.**—20 houses at School-road, Wickham, for the R.D.C. Mr. L. W. Hunt, Surveyor, 97, West-street:—

12 houses, School-road, Wickham:—
*G. Hoare, Salisbury (£392 per house) £4,704
8 houses, North Boarhunt:—
*G. Mitchell, Portsmouth (£394 per house) ..... £3,152

**Fermoy.**—Boiler house at the County Hospital, for the North Cork Board of Heath:—

*J. O'Keeffe, Mallow ..... £150 15

**Goole.**—Roman Catholic Mission Hall, for the Rev. Theodore Terken, St. Joseph's, Pasture-road:—

*F. & H. Sutcliffe, Hebden Bridge.

**Ilminster.**—Construction of intake works at Cudworth and covered service reservoir and about 6½ miles of 6-in., 5-in., 4-in., 3-in. and 2-in. mains, for the U.D.C. Messrs. A. P. I. Cotterell & Son, Chartered Civil Engineers, 54, Victoria-street, S.W.1:—

*H. Middleton, Liss.

**Larne.**—20 houses, for U.D.C.:—

*J. Girvan ..... £7,000

**London.**—Supplying and fixing oak pale fencing at the Shirley Schools, Wickham-road, Shirley, for the Bermondsey B.G.:—

| | | | |
|---|---|---|---|
| H. W. Spinks, London | £697 | 15 | 0 |
| Wm. Stenning & Son, Red Hill | 680 | 0 | 0 |
| R. Mansell, Croydon | 660 | 0 | 0 |
| Rowland Bros., Bletchley | 635 | 0 | 0 |
| Neville, Hine & Co., Ltd., Tooting | 565 | 0 | 0 |
| T. Durrant & Sons, Coulsdon | 555 | 9 | 10 |
| Astolat Co., Ltd., Guildford | 547 | 0 | 0 |
| Horder & Son, Honor Oak | 540 | 0 | 0 |
| *H. J. Ford, Harlesden | 499 | 0 | 0 |

**London.**—Cleaning and repairing tanks, roofs, gutters, at the Shirley Schools, for the Bermondsey B.G.:—

| | | | |
|---|---|---|---|
| Bridges & Clarke | £760 | 0 | |
| E. J. Hinton | 434 | 0 | |
| H. W. Spinks | 342 | 0 | |
| Horder & Son | 275 | 0 | |
| R. Mansell | 267 | 0 | |
| *G. J. Green & Son, Ltd. | 245 | 0 | |
| F. G. Marshall & Son | 199 | 10 | |

(All of London.)


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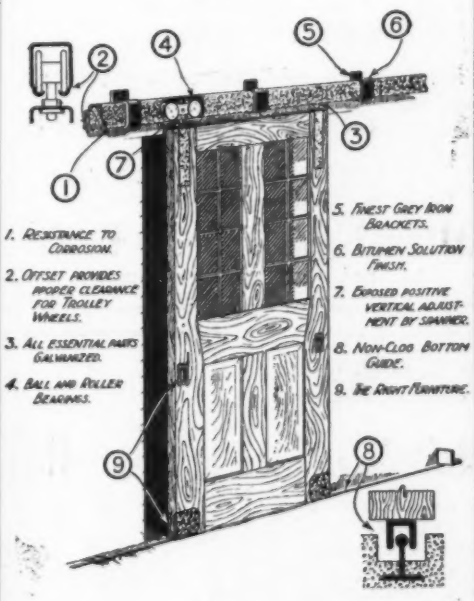
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**London.**—Structural alterations for the provision of accommodation at the Institution, for the Chelsea B.G.:—

*White & Johnson ..... £145

**London.**—Installation of heating and ventilating at the new store building at the central repair depot, and low-pressure hot-water heating apparatus for the offices and schoolroom adjoining, for the L.C.C.:—

| | |
|---|---|
| J. and F. May | £2,169 |
| Brightside Foundry and Engineering Co., Ltd. | 1,920 |
| H. J. Cash & Co., Ltd. | 1,833 |
| J. Jeffreys & Co., Ltd | 1,672 |
| Standard & Pochin Bros., Ltd., Leicester | 1,650 |
| Barrett & Wright, Ltd. | 1,636 |
| *W. G. Cannon & Sons, Ltd. | 1,536 |
| Architect's estimate | 1,665 |

**London.**—For painting, repairs, and other works to the Register Office, Liverpool-road, N., for the Guardians of the Poor of St. Mary, Islington. Mr. E. J. Harrison, L.R.I.B.A., Architect, 23, Berkeley-rd., Crouch End, N.8:—

| | | | |
|---|---|---|---|
| Messrs. Tersons | £433 | 3 | 6 |
| W. J. Cooper | 425 | 0 | 0 |
| F. Troy & Co. | 381 | 0 | 0 |
| Buckingham & Co. | 378 | 0 | 0 |
| S. Shaw | 369 | 15 | 0 |
| Stevens & Sons | 363 | 0 | 0 |
| Henson & Co. | 345 | 0 | 0 |
| W. Martin | 342 | 0 | 0 |
| J. C. Mather | 341 | 0 | 0 |
| Ricketts & Sons | 339 | 0 | 0 |
| O. C. Williams | 335 | 0 | 0 |
| A. C. Mackinlay | 329 | 0 | 0 |
| W. H. Watts | 323 | 0 | 0 |
| A. O. Newman | 309 | 3 | 0 |
| *Randall & Sons | 296 | 0 | 0 |

(All of London.)

**Loughton.**—32 houses on the housing site off Englands-lane, for the U.D.C. Mr. H. White, F.R.I.B.A., Architect, High-road:—

| | |
|---|---|
| A. W. King & Co., Harlow | £16,192 |
| E. A. Russell, Walthamstow | 14,900 |
| W. H. Fincham, Chelmsford | 14,450 |
| West & Brooks (Leyton), Ltd., Walthamstow | 14,000 |
| Wallace & Wallace, Woodford Green | 13,536 |
| Eaton Bros., Loughton | 13,430 |
| A. G. Tufton, Walthamstow | 13,344 |
| C. J. Smith, Abridge | 13,088 |
| H. T. Brisley, Stratford-on-Avon | 12,952 |
| J. H. Thompson & Sons, Grimsby | 12,869 |
| J. Oram & Son, Waltham Abbey | 12,832 |
| Chappell & Co., London | 12,640 |
| Monolithic Building Co., London | 12,352 |
| Sherren, Ltd., Lewes | 11,955 |
| *Warriner & Herd, Ltd., Loughton | 11,873 |

**Luton.**—Steelwork for the reinforced concrete portion of the new tanks at the Sewage Farm, for the T.C.:—

*L. G. Mouchel & Partners ..... £865

**Navan.**—Extension of the Technical School:—

| | | | |
|---|---|---|---|
| Matthew Quinn, Bellinter | £1,206 | 8 | 5 |
| McEntaggart Bros., Nobber | 1,095 | 10 | 0 |
| E. S. Sargent, Trim | 1,080 | 0 | 0 |
| Patk. Coldrick, Navan | 965 | 13 | 10 |
| *F. Delaney, Navan | 795 | 10 | 0 |

**Ogmore Vale.**—Physics laboratory at the Ogmore Vale secondary school, for the Glamorgan E.C. Mr. D. Pugh Jones, F.R.I.B.A., County Architect, County Hall, Cardiff:—

*J. S. Moore, Ogmore Vale ..... £1,703 4 9

**Oldbury.**—Erection of the first portion of new elementary schools at Bristnallhall-lane, Oldbury, and for laying out the playground and other work in connection with same, for the E.C.:—

*W. Jackson (Langley Green), Ltd., Birmingham ..... £16,036

**Pontycymmer.**—Handicraft centre at Ffaldau Boys school, for the Glamorgan E.C. Mr. D. Pugh Jones, F.R.I.B.A., County Architect, County Hall, Cardiff:—

*W. A. Jones, Llantwit Major ... £764 1 5

**Portrane.**—Construction of new 6-in. and 9-in. drains, tank, and other works incidental to the drainage of the farmyard of Portrane Mental Hospital, Donabate, Co. Dublin, for the Grangegorman Mental Hospital Committee. Mr. P. H. McCarthy, Engineer, 26, Lower Leeson-street, Dublin:—

| | |
|---|---|
| Wm. Lacy | £593 |
| Patrick Blake | 489 |
| *Ferguson & Co. | 432 |

(All of Dublin.)

**Prescot.**—For (1) nurses' lecture and recreation room; (2) new coal store; and (3) lavatory at "B" block, at the Institution, for the B.G. Mr. W. Ellis, Architect, 9, Hardshaw-street, St. Helens:—

†T. & A. Taylor, Prescot.

**Runcorn.**—20 non-parlour type houses in Kingsway, for the R.D.C. Mr. J. L. Beckett, Engineer and Surveyor:—

*Selwood Lloyd & Co., Rock Ferry.

**Sheffield.**—Rebuilding of licensed premises, the "Wheatsheaf Inn," at Eccleshaw-road, South Sheffield, for Messrs. Ind Coope & Co., Ltd. Mr. T. H. Thorpe, F.R.I.B.A., Architect, St. James-street, Derby:—

*Reeves, Charlesworth, Ltd., Sheffield.

**Staines.**—14 houses at Ashford Common, for the R.D.C.:—
*Feltham Hill Construction Co., Ashford ..... £5,702

**Stockport.**—Abattoirs at Adswood, for the Stockport Industrial and Equitable Society, Ltd.:—
*H. Bardsley & Sons, Ltd., Stockport.
*Steelwork*—
*Phœnix Construction Co., Manchester.

**Skegby.**—30 houses for the R.D.C. Mr. L. Dodsley, Architect, Portland-square, Sutton-in-Ashfield:—

| | | | |
|---|---|---|---|
| G. Shipman, Riddings ..... | £14,490 | 0 | 0 |
| A. Keeling, Sutton-in-Ashfield ... | 14,233 | 2 | 6 |
| J. & J. Warner, Mickleover ..... | 13,980 | 0 | 0 |
| H. Rouse, Mansfield Woodhouse | 13,500 | 0 | 0 |
| Harris Bros., Marchay ..... | 13,425 | 0 | 0 |
| J. W. Halladay, Worksop ..... | 13,200 | 0 | 0 |
| G. Brentnall & Son, Riddings ... | 12,900 | 0 | 0 |
| R. Moore, Mansfield ..... | 12,870 | 0 | 0 |
| Hutchinson & Son, Ltd., Sutton-in-Ashfield ..... | 12,697 | 0 | 0 |
| J. Keeling, Sutton-in-Ashfield ... | 12,570 | 0 | 0 |
| D. Roberts & Son, Ilkeston ..... | 12,400 | 0 | 0 |
| Radford & Jenkins, Rainworth | 12,180 | 0 | 0 |
| S. Johnson, Hucknall ..... | 12,150 | 0 | 0 |
| F. S. Walker, Creswell ..... | 11,925 | 0 | 0 |
| Blythe & Son, Mansfield ..... | 11,636 | 0 | 0 |
| *J. Searson, Sutton-in-Ashfield... | 11,610 | 0 | 0 |

**Uttoxeter.**—19 non-parlour type houses, for the U.D.C. Mr. S. S. Proud, Engineer and Surveyor:—

| | Per house. |
|---|---|
| John Chell & Sons, Uttoxeter, Staffs ..... | £388 0 |
| Beddoes & O'Dare, Cheadle ..... | 388 10 |
| E. Gaunt & Son, Derby ..... | 383 0 |
| Ward & Godbehire, Uttoxeter ..... | 440 0 |
| Ball and Robinson, Stoke-on-Trent | 392 0 |
| J. & J. Warner, Micklesover ..... | 397 0 |
| W. A. Ward, Burton-on-Trent ..... | 410 0 |
| G. H. Adams, Burton-on-Trent ..... | 417 0 |
| F. G. Taylor, Newcastle, Staffs ... | 463 0 |

**Uxbridge.**—Enlargement and conversion of the County school for use as an elementary school, for the Middlesex C.C. Mr. H. G. Crothall, F.R.I.B.A., County Architect:—

| | |
|---|---|
| Albert Monk, Edmonton ..... | £5,472 |
| W. Lacey, Hounslow ..... | 5,454 |
| A. & B. Hanson, Ltd., Southall ..... | 5,397 |
| W. Lawrence & Son, London ..... | 5,296 |
| Y. J. Lovell & Son, Gerrard's Cross ... | 5,288 |
| G. Godson & Sons, Ltd., Kilburn ..... | 5,130 |
| H. Knight & Son, Tottenham ..... | 5,127 |
| G. Bollom & Sons, Ltd., Acton ..... | 5,112 |
| Ferris Bros., Acton ..... | 5,069 |
| J. Dorey & Co., Ltd., Brentford ..... | 4,982 |
| W. S. Try, Cowley ..... | 4,945 |
| *Fassnidge & Son, Ltd., Uxbridge ..... | 4,887 |

**Wadebridge.**—Concrete reservoir and a short length of 2-in. cast-iron piping, at Roch, near Wadebridge, for St. Enodoc Golf Club Committee. Capt. C. J. Jenkin, Chartered Civil Engineer, 91, Old Town-street, Plymouth:—
Tom Bros., St. Teath.
Hortop, Plymouth.
J. Alderman, Par.
‡A. H. Dingle, Redruth.

**Wakefield.**—Reconstruction of premises in Cross-square, for Messrs. Webster Bros., Ltd.:—
*Main Contract*—
*A. C. Green.
*Shopfitting*—
*G. Blakey, Ltd.

**Worcester.**—For alterations at the Bromsgrove-Stourbridge-road Council school, for the E.C.:—
*J. & A. Bazier, Ltd. ..... £3,102


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